PROPOSAL FOR A CERTIFICATE PROGRAM

Date: 9/20/2024

School/College/Unit: Franklin College of Arts and Sciences & The Office of the Senior Vice President for Academic Affairs and Provost

Department/Division: Institute for Artificial Intelligence

Certificate Title: Certificate in Artificial Intelligence Methods

Effective Term: Spring 2025

Which campus(es) will offer this certificate? Athens

Level (Undergraduate, Graduate, or Post-Baccalaureate): Undergraduate

Program Abstract: The Institute for Artificial Intelligence is proposing to create an undergraduate Certificate in Artificial Intelligence Methods. The certificate is intended to provide a firm foundation in the principles and techniques of contemporary artificial intelligence. It is also intended to provide the skills necessary to apply AI-based technologies to solve problems, evaluate both the technical performance of AI-based solutions and their potential ethical/societal implications, and communicate AI concepts and findings to others.

Admission into the certificate requires MATH 1113 or MATH1113E (Precalculus). While open to all meeting that requirement, the certificate is especially suited to computer science students, data science students, computer systems engineering students, and students in other mathematical and scientific fields.

Faculty proposing certificates offered by one academic unit should complete page 2.

Faculty proposing certificates offered by multiple academic units should complete pages 4-6.

After approval by school/college/unit, proposals for undergraduate programs should be sent to the Office of Curriculum Systems (currsys@uga.edu). Proposals for graduate programs should be sent to the Graduate School (gradassociatedean@uga.edu)

Certificates Offered By Multiple Academic Units

1. Purpose and Educational Objectives

State the purpose and educational objectives of the program. How does this program complement the mission of the institution?

Though artificial intelligence as a field of study has existed for approximately 70 years, and though there has been relatively steady progress, the rate of advancement—and adoption—has increased dramatically in the last 10 years. Very suddenly, AI technologies have become ubiquitous in society, and AI tools are used in essentially all fields.

The rate of change has been sudden enough, however, that current curricula of many fields do not adequately provide students with an understanding of AI or provide the skills necessary to apply AI technologies in a responsible manner.

The proposed certificate is intended to help fill this gap. It is consistent with the mission of the University; it will provide training to students in multiple disciplines in an important technology that they will undoubtedly encounter in their professional and personal lives.

2. Need for the Program

Explain why this program is necessary. In addition, provide the following information:

The certificate is interdisciplinary and requires both computation-oriented training as well as training in the ethical and social implications of AI. The certificate complements existing bachelor's degree programs. To our knowledge, there is no degree which requires exposure to the topics presented in the certificate's core set of courses. Even to students in a STEM field such as computer science, the certificate would indicate to potential employers that the student has AI-training. Bachelor's degrees specifically in AI are rare in the United States. UGA does not have one. Currently, the National Center for Education Statistics lists only 19 schools in the nation with a bachelor's degree using the AI CIP code (11.0102).[1]

    a. Semester/Year of Program Initiation: **Spring 2025**
    b. Semester/Year of Full Implementation of Program: **Spring 2025**
    c. Semester/Year First Certificates will be awarded: **Spring 2026**
    d. Annual Number of Graduates expected (once the program is established): **25-35**
    e. Projected Future Trends for number of students enrolled in the program

In any given semester, we expect the numbers to remain relatively constant given current instructional resources.

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[1] https://nces.ed.gov/collegenavigator/?s=all&p=11.0102&l=93 (Search performed 9/3/2024)

3. Student Demand

a. Provide documentation of evidence of student demand for this program, including a student survey.

Interest in AI (at a societal level) is currently exceptionally high and likely to remain so for some years. This is true at UGA and most other institutes of higher education. In the last 5-10 years, many universities across the country have developed artificial intelligence certificate, bachelor's, and graduate degree programs. At UGA:

1. Computer science has a high enrollment in Franklin College, and the proposed certificate requirements are low for computer science students (and for computer engineering students and Data Science students, who take several courses in common with CS students). A percentage of those students would find the certificate attractive.
2. The CS/AI Double Dawgs program is popular. Some students in the pathway choose not to pursue the graduate portion of the program, and we expect some of these will choose to pursue the certificate instead.
3. Enrollment in the graduate programs offered by the AI Institute is increasing. In Fall 2024, the Institute received its largest incoming class. In total, there are over 50 graduate students enrolled in the graduate programs.

To better gauge interest in the certificate, a survey was created and sent to the IAI Faculty Fellows with a request to forward it to listservs in their unit. There are over 70 faculty fellows, collectively representing many units across campus). In addition, the survey was sent to undergraduate coordinators or advisors in the following units:

- College of Family and Consumer Sciences
- Department of Chemistry
- Department of English
- Department of Geography
- Department of History
- Department of Linguistics
- Department of Management Information Systems
- Department of Philosophy
- Department of Physics and Astronomy
- Department of Psychology
- Division of Biological Sciences
- Mary Frances Early College of Education
- School of Computing
- School of Public and International Affairs

We received 222 responses. The survey was anonymous, but completing it required users to log in using their MyID and password. Users could only submit a response once.

Statistics for the survey questions are provided below.

Results of Survey on AI Certificates

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Q1. If an AI certificate is created, I would consider pursuing it.	3.2%	4.5%	5.4%	31.7%	55.2%
Q2. An AI certificate would complement my chosen primary degree program and/or provide skills I anticipate needing in my work after graduation.	2.7%	3.6%	9.5%	27.9%	56.3%
Q3. It is important to me that the certificate provides training to understand how AI tools work and how to successfully use them	2.3%	3.2%	3.2%	23.4%	68.0%
Q4. It is important to me that the certificate provides training to create new or modify existing AI technologies.	1.8%	3.2%	7.2%	27.5%	60.4%

	Strongly Disagree/Disagree/Neut	Agree/Strongly Agree
Q1	13.5%	86.5%
Q2	15.8%	84.2%
Q3	8.6%	91.4%
Q4	12.2%	87.8%

b. Provide evidence that demand will be sufficient to sustain reasonable enrollment.

Given the above, we do not believe that continued demand will be an issue. Our projected numbers are possibly conservative.

c. To what extent will minority student enrollments be greater than, less than, or equivalent to the proportion of minority students in the total student body?

Below are recent statistics from the OIR for the Computer Science (FY 2021-2022) bachelor's degree and for UGA as a whole (Fall 2022). We anticipate that demographics will be similar to Computer Science, though possibly with more gender equality. For the interdisciplinary

MSAI degree (which the proposed certificate somewhat resembles), roughly 36% of students identify as female.

Computer Science:
- Female: 23.3%; Male: 76.7%
- Asian: 33.7%; Black or African American: 10.4%; Hispanic or Latino: 7.1%; Two or more races: 4.7%; White: 42.3%; Not reported: 1.8%

UGA's Fall 2022 statistics:
- Female: 58%; Male: 42%
- American Indian or Alaskan Native: 0.1%; Asian: 12.9; Black or African American: 6.3%; Hawaiian or Pacific Islander: 0.1%: Hispanic or Latino: 7.4%; Two or more races: 4.2%; White: 67.9%; Not reported: 1.2%

4. Program of Study
Provide a detailed program of study for the certificate program, including:
a. Specific course prefixes, numbers, and titles

Admission: MATH 1113 or MATH1113E Completing precalculus with a grade of C- or better is required for admission to certificate.

Students completing the certificate must earn a grade of C- or better in each of the required courses.

At least 16 credit hours are required to earn the certificate, as described below.

Step 1: Foundational AI Courses (9-10 credit hours)
1) One of the following:

- CSCI 2610 – Discrete Mathematics (4 credits)
- CSCI 2611 – Discrete Mathematics for Engineers (3 credits)
- CSCI 1360 – Found. Data Analytics (4 credits)
- PHIL 2500 or PHIL 2500E or PHIL 2500H – Symbolic Logic (3 credits)

Note: Students whose major requires any of the above classes should take a third elective class (Step 2) instead.

2) One of the following:

- ARTI/PHIL 4340/6340 – Ethics and AI (3 credits)
- ARTI 2130 – Artificial Intelligence for Humans (3 credits)

3) CSCI/PHIL 4550/6550 – Artificial Intelligence (3 credits)

Note: Students pursuing the Bachelor of Science in Data Science must take at least 1 class in Group I.

Step 2: AI, Computer Science Electives (at least 7 credit hours):

Pick at least two elective classes chosen from the list below.

Group I

- CSCI 4560/6560 – Evolutionary Computation (4 credits)
- CSCI 4800/6800 – Human Computer Interaction (4 credits)
- CSCI(ARTI) 4530 – Introduction to Robotics (4 credits)
- CSCI(ARTI) 4600/6600 – Reinforcement Learning (3 credits)

Group II

- CSCI 3360 – Data Science I (4 credits)
- CSCI 4360/6360 – Data Science II (4 credits)
- CSCI 4380/6380 – Data Mining (4 credits)
- CSCI 4850/6850 – Biomedical Image Analysis (4 credits)

   b. Identify any new courses created for this program

No new courses are proposed specifically for the program.

5. Model Program and Accreditation

Over the last few years, several AI certificates, at both the undergraduate and graduate level, have been developed at universities in the United States. In preparation for developing this proposal, a survey of them was conducted (documents describing some of them can be found here). The survey concluded that graduate certificate programs and programs intended for professionals outnumber undergraduate certificates programs. Undergraduate certificates are either heavily oriented toward STEM fields or else oriented towards non-programmers. The former typically do not require an ethics component, which the current proposal considers essential.

We summarize certificate efforts at selected schools below.

University System of Georgia: To our knowledge, there is no university within the Georgia university system which offers an undergraduate (or graduate-level) certificate in AI comparable to the one proposed here. Several data science programs exist.[2] The USG database of authorized degrees and majors indicates[3] that Georgia College and State University has a certificate of less than one year in Artificial Intelligence, but we cannot find evidence of it online. Georgia State University has both a graduate-level Certificate in Trustworthy Artificial Intelligence Systems and another in Artificial Intelligence in Business Innovation. Both are online. We consider these to be in another category than the current proposal.

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[2] https://apps.ds.usg.edu/ords/f?p=118:6::::RP:P6_SEARCH:data. Accessed Sept 3, 2024.
[3] https://apps.ds.usg.edu/ords/f?p=118:6::::RP:P6_SEARCH:artificial. Accessed Sept 3, 2024.

University of Florida: UF offers several AI certificates, many of them domain-specific. A few are presented below. The undergraduate AI Fundamentals and Applications Certificate is the closest to the one proposed here.

- Artificial Intelligence Fundamentals and Applications Certificate (9 credits): A fundamental AI course, an ethics course, followed by a domain specific elective.
- Artificial Intelligence in Public Health and Healthcare Certificate (9 credits)
- Geographic Artificial Intelligence and Big Data Certificate (12-13 credits)

Florida Atlantic University: Offered by the Department of Electrical Engineering and Computer Science, the AI Certificate (15 credits) provides two tracks: a programming track, and another track intended for students without programming experience. The certificate does not require an ethics course.

University of Missouri at Saint Louis: The undergraduate Certificate in Artificial Intelligence (15 Credits) is offered by The Department of Computer Science. The certificate consists of an algorithms course, an introductory AI course, and 3 computer science electives.

University of Central Florida: An example of a non-STEM certificate is the Artificial Intelligence, Big Data, and Human Impacts certificate (12 credits) offered by the Department of Rhetoric. Both an ethics course and an AI literacy course are required.

University of South Carolina: The Graduate Artificial Intelligence Certificate (12 credits) is offered by the Department of Computer Science and Engineering: No ethics course is required. The courses, all STEM oriented, are graduate-level courses focusing on selected subfields of AI.

Wilmington University: The Artificial Intelligence Certificate (18 credits) requires 6 courses with no electives; the courses include an ethics course, an introductory data science course with Python, and an introduction to AI course.

 b. If program accreditation is available, provide an analysis of the ability of the program to satisfy the curricular standards of such specialized accreditation.

 To our knowledge, there are no accreditation bodies for AI degrees. There are multiple professional certifications intended for individuals. In our view none have sufficient acceptance nationally or globally to warrant formally aligning the proposed certificate to.

6. Student Learning Outcomes
 Describe the proposed learning outcomes for the certificate program.

Program Learning Outcomes.

Upon completing the certificate program, the student will be able to do the following:

1. **Understanding AI Fundamentals:**
   - **PO-1:** Identify and explain the basic concepts and principles of artificial intelligence.
   - **PO-2:** Explain the ethical issues and societal impacts created by AI technologies.
2. **Application and Evaluation:**
   - **PO-3:** Analyze a problem, evaluating the suitability of different AI technologies.
   - **PO-4:** Apply AI concepts and technologies to solve problems within their field of work or study.
   - **PO-5:** Evaluate the performance and quality of AI-based solutions.

3. **Communication:**
   - **PO-6:** Effectively communicate AI concepts and findings, including potential ethical considerations.

Course Learning Outcomes

Learning outcomes for the central non-elective courses comprising the degree are shown below.

CSCI 4550

This course presents a survey of topics in artificial intelligence most relevant to students studying computer engineering. At the end of the semester, all students will be able to do the following:

1. Represent the environments of decision-making problems including their observability, determinism, continuousness, and other criteria
2. Identify and compare agent types, such as reflex, goal-based, and utility-based
3. Implement uninformed search strategies such as BFS, DFS, depth-limited search, and bidirectional search
4. Implement heuristics in informed search strategies, as well as identify the aspects of a good heuristic
5. Evaluate the effectiveness of local search algorithms, including hill climbing, simulated annealing, and beam searches
6. Evaluate competitive game outcomes by using minimax algorithms, alpha-beta pruning, and evaluation functions
7. Utilize basic inferencing rules in propositional logic, such as resolution and forward/backward chaining
8. Express propositional statements using quantifiers and functions in First-Order logic
9. Implement Java or written algorithms that evaluate goal-oriented problems using propositional or first-order propositional logic
10. Represent knowledge using constructs such as Ontologies

		Program Outcomes					
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6
Course Learning Outcomes	1	•			•		
	2	•		•	•	•	
	3				•	•	
	4				•		
	5			•	•	•	
	6			•	•	•	
	7				•		
	8	•			•		
	9				•		
	10				•		

ARTI 2130

Students who are successful in this course will:

1. Describe basic approaches to machine learning.
2. identify issues of bias that affect artificial intelligence.
3. practice creative approaches to problem-solving to prepare them for meeting future challenges with artificial intelligence and technology.
4. create and evaluate arguments about the promises and effects of artificial intelligence.

		Program Outcomes					
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6
Course Learning Outcome	1	●					●
	2	●	●				
	3		●		●		
	4		●			●	●

ARTI 4340

Students who are successful in this course will:

1. Explain ethical positions and problems related to artificial intelligence.
2. Explain aspects of artificial intelligence in relation to its effects on individuals and society.
3. Take and defend ethical positions on AI topics.

		Program Outcomes					
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6
Course Learning Outcome	1		●				●
	2		●				●
	3		●				●

Learning outcomes for selected electives are shown below.

CSCI 3360

Students who are successful in this course will be able to:

1. Use existing Python tools to read and preprocess raw data of various formats (text, images, binary).
2. Choose a proper statistical model for extracting knowledge from a particular dataset, given the advantages and disadvantages of the model.
3. Implement at least one algorithm from the categories of regression, classification, clustering, and convex optimization.
4. Design and document analytical pipelines to be reproducible by others.
5. Use and interpret the results of dimensionality reduction on high dimensional datasets.
6. Choose the most effective visualization to convey the knowledge learned from the data.

		Program Outcomes					
		PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**
Course Learning Outcomes	**1**			•	•		
	2			•	•	•	
	3				•	•	
	4	•			•		•
	5				•	•	
	6		•	•	•		•

CSCI 4360

This course builds on the concepts from Data Science I by introducing students to more advanced analytics techniques. At the end of the semester,

all students will be able to do the following:

1. Design and implement a full data science pipeline, from data preprocessing and feature selection to model evaluation and performance optimization.
2. Rigorously and quantitatively select the optimal model for a given problem.
3. Understand the technical, ethical, and logistical trade-offs of some models over others for certain situations.
4. Select existing packages or employ techniques to handle analysis of data that is too large to load into memory at once.
5. Scale analyses beyond single cores to highly parallel and fully distributed heterogeneous computing environments.

		Program Outcomes					
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6
Course Learning Outcomes	1				●		
	2			●	●		
	3		●	●			
	4			●	●		
	5				●		

CSCI 4380

This course presents a survey of topics in data mining. At the end of the semester, all students will be able to do the following:

1. Analyze a real-world data set and identify appropriate data mining techniques to apply thereto.
2. Write a program or use a package to implement a data mining algorithm.
3. Conduct data mining experiments and properly report and discuss the results.
4. Effectively present a data mining article to an audience.
5. Review and critique data mining articles

		Program Outcomes					
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6
Course Learning Outcomes	1			●			
	2				●		
	3	●		●	●	●	●
	4	●					●
	5			●		●	●

CSCI 4530

1. Familiar with robot control architectures.
2. Familiar with the robot perception and planning algorithms that provide meaningful outcomes for autonomous mobile robots.
3. Design and analyze the complexities of designing and constructing small autonomous mobile robots that achieve specific goals.
4. Utilize robot simulators and software development frameworks for programming mobile robots that achieve specific goals.
5. Design, analyze, and implement mobile robot algorithms using simulated and real-world sensor data.
6. Familiar with the state-of-the-art of autonomous mobile robotics.

		Program Outcomes					
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6
Course Learning Outcomes	1	●					
	2	●					
	3			●	●	●	
	4				●	●	

		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6
	5			•	•	•	
	6	•					

CSCI 4560

This course presents a survey of topics in evolutionary computation. At the end of the semester, all students will be able to do the following:

1. Formulate a problem as an evolutionary computation search/optimization by specifying representations, selection and variation operators.
2. Write a program or use a package to implement an evolutionary algorithm.
3. Conduct evolutionary optimization experiments and properly report and discuss the results.
4. Effectively present an evolutionary computation article to an audience.
5. Review and critique evolutionary computation articles.
6. Reason about the schema theorem and the theory of evolutionary computation.

		Program Outcomes					
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6
	1			•	•		
Course Learning Outcomes	2				•		
	3				•	•	•
	4	•					•
	5			•		•	
	6	•			•		

CSCI 4600

1. Situate and understand a key area of artificial intelligence and specifically in the field of machine learning. Understand the corresponding class of problems.
2. Study the challenges and algorithms for reinforcement learning by agents situated in uncertain single-agent and multi-agent environments.
3. Gain proficiency in the use of computing tools related to reinforcement learning, designing and giving effective research presentations, and working in a team.

		Program Outcomes					
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6
Course Learning Outcome	1	•					
	2			•			
	3				•	•	•

CSCI 4800

This course presents an introduction to Human-Computer Interaction. At the end of the semester, all students will be able to do the following:

1. Apply the principles of user-centered design, via group projects, in formulating user interface prototypes in novel domains.
2. Create a hierarchical task analysis to analyze and specify which tasks should be supported in a user interface
3. Gather design requirements from users and conduct a requirements analysis
4. Describe the paradigm shifts in HCI and explain the causal factors for each.
5. Develop and implement a testing plan for evaluating a user interface design
6. Develop and implement benchmark testing
7. Generate several user interface design alternatives that satisfy a set of user requirements
8. Use programming or a software package to create prototypes
9. Assess and compare the success of a user interface along multiple dimensions
10. Evaluate the trade-offs of usability considerations (e.g. novice vs experienced users, efficiency) in all stages of the design process.

		Program Outcomes					
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6
Course Learning Outcomes	1			●		●	
	2						
	3			●			
	4						
	5					●	
	6					●	
	7			●			
	8				●		
	9					●	
	10					●	

7. Assessment
Describe how the learning outcomes for the program will be assessed.

Assessment of the Program Learning Outcomes will be performed using tests, reports, papers, and other graded assignments in each of the courses comprising the certificate program. Each course has specific learning outcomes. A matrix mapping course learning outcomes (for core courses) to program outcomes is shown below. Collectively, the non-elective courses ensure that each program learning outcome is covered. Course outcomes for electives provide additional reinforcement.

Review of the certificate program will occur annually through the use of an exit survey taken by graduating students. It will also form part of the Institute's regular 7-year unit review.

8. Faculty Resources
Define the size, experience, and specializations of the full-time faculty needed to support an effective program. Specify how many full-time faculty will provide direct instructional support to this program.

a. Identify the extent to which such faculty resources currently exist at the institution
b. Identify the extent to which additions to the faculty will be needed to fully implement the program
c. Where it is deemed necessary to add faculty in order to fully develop the program, give the desired qualifications of the persons to be added.

One of the ethics courses, ARTI 2130 or ARTI/PHIL 4340/6340, is currently taught at least once per year by a full-time faculty member of the IAI (Dr. Van Orman), and the counterpart graduate course of the latter is required for the AI PhD program. Similarly, CSCI/PHIL 4550 and CSCI 4380 are core courses of both the MS and PhD AI graduate programs. Multiple sections of these are taught by IAI or SoC faculty (Commonly by Van Orman and Dr. Maier). Other 4000-level courses comprising the certificate are taught by faculty of the SoC or IAI. Dr. Khaled Rasheed, the IAI Institute's Interim Executive Director, commonly teaches the elective CSCI 4560. Dr. Prashant Doshi, the IAI Institute's Interim Associate Director for Research, teaches CSCI/PHIL 4550 and CSCI(ARTI) 4600 regularly. The 1000- and 2000-level courses often are taught by graduate teaching assistants.

The Core IAI faculty involved are:

- Dr. Kimberly Van Orman: Lecturer and Undergraduate Coordinator within the IAI
- Dr. Frederick Maier: Associate Director of Academic Programs within the IAI

Key SoC faculty involved are:

- Dr. Khaled Rasheed: Professor within the SoC and Interim Executive Director of the IAI.
- Dr. Prashant Doshi, Professor within the SoC and Interim Associate Director for Research of the IAI.

All have training and substantial teaching experience in relevant facets of AI.

The current faculty of the School of Computing can be found at the below URL:

- https://cs.uga.edu/directory/regular-faculty

9. Faculty Members
For each faculty member directly involved in this program, please provide:
a. Name, rank, degree(s), academic specialty, and educational background
b. Special qualifications related to this program
c. Relevant professional and scholarly activity for the past five years
d. Projected responsibility in this program and required adjustments in current assignments

CVs for core faculty are included with this proposal. See (8) above for a description of general responsibilities. Since the courses comprising the certificate program are existing courses and form part of other programs, it is not anticipated that adjustments of assignments will be needed.

10. Facilities and Resources
    a. Describe the building, classroom, laboratory, and office space that will be available for this program and evaluate their adequacy to fully support an effective program. Plans for allocating, remodeling, or acquiring additional space to support the program's full implementation should also be identified.

Classes will take place in Boyd Hall or in other buildings available through the course scheduling system. There are no plans for re-allocating or remodeling space to support this program.

    b. Describe the available library resources for this program and the degree to which they are adequate to support an effective program. Identify the ways and the extent to which library resources need to be improved to adequately support this program.

No additional library resources are needed to support the program. The same resources available to students in the Computer Science, Artificial Intelligence, and Cognitive Science degree programs can be utilized.

    c. Document the extent to which there is sufficient computer equipment, instructional equipment, laboratory equipment, research support resources, etc., available to adequately support this program. Specify improvements needed in these support areas.

No improvements are needed. The Institute for Artificial Intelligence consists of 2,393 square feet of office, meeting, and lab space on the 5th Floor of the Boyd Graduate Studies Research Center. Two rooms (574 square feet) are used as shared lab space. The Institute maintains a set Windows desktop PCs as well as 10+ Linux workstations. Students of the certificate program will share resources with students of other degree programs managed by the IAI and use resources available to students in CSCI courses. Separately, the Institute owns Windows servers within the Boyd Data Center suitable for maintaining websites and for storing/disseminating data and code.

11. Budget
    a. Detailed funding to initiate the program and subsequent annual additions required to fully implement the program are needed below. Estimates should be based upon funding needed to develop an effective and successful program and not the minimum investment required to mount and sustain a potentially marginal program.

	First Year	**Second Year**	**Third Year**
Personnel	0	0	0
Operating Costs	0	0	0
Capital Outlays	0	0	0
Library Acquisitions	0	0	0
TOTAL	0	0	0

The existing programs managed by the IAI are not in danger of becoming marginal. Our view is that a certificate program can be accommodated with existing resources.

    b. Indicate the extent of student support (fellowships, assistantships, scholarships, etc.) available for this program and evaluate the adequacy of this support. Assistantships funded from institutional (as opposed to sponsored) funds should be included in this funding analysis as well.

There is no current plan to offer a fellowship, assistantship, or scholarship (either internally or externally funded) to support students in the certificate program. Such funding is not needed for the program's success.

    c. Identify sources of additional funds needed to support the program and the probability of their availability.

No additional funds are needed.

    d. Identify long-range plans for additional or expanded facilities necessary to support an effective program. Evaluate the timing and likelihood of such capital funding.

Any expansion of facilities for the certificate program would be part of a larger plan to expand facilities for the undergraduate and graduate degree programs offered by the Institute. Currently, however, and apart from periodic and already planned for updating of computing resources, there are no long-term plans to expand facilities.

12. Administration
Describe and evaluate the structure for the administration of the program. Describe the process and criteria for how students will be admitted to and retained in the program.

Assessment of the Program Learning Outcomes will be performed using tests, reports, papers, and other graded assignments in each of the courses comprising the certificate program. Each course has specific learning outcomes. A matrix mapping course learning outcomes (for core courses) to program outcomes is shown below. Collectively, the non-elective courses ensure that each program learning outcome is covered. Course outcomes for electives provide additional reinforcement.

Review of the certificate program will occur annually through the use of an exit survey taken by graduating students. It will also form part of the Institute's regular 7-year unit review.

Please submit documentation of the following approvals with the proposal:
- Department Heads/Directors of all units involved in the program
- Deans/Vice Presidents of all units involved in the program
- Heads of any academic units which offer courses used in the program of study
- Heads of any academic units which offer similar programs

UNIVERSITY OF
GEORGIA
Office of the Provost

1785 ™

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September 13, 2024

Franklin College Curriculum Committee
University of Georgia Curriculum Committee
University of Georgia

Dear Members of the College and University Curriculum Committees,

On behalf of the Office of the Provost, I am pleased to offer my full support for the newly proposed Certificate in Artificial Intelligence Methods. This new certificate will be a great addition to the university's efforts to expand and strengthen the role of Artificial Intelligence and Data Science on campus and beyond. It will offer wonderful skills to students from the School of Computing and related disciplines. It will also serve as a template for several other certificates envisioned to be created soon.

Sincerely,

Jeanette Taylor
Vice Provost for Academic Affairs

Franklin College of Arts and Sciences
Office of the Dean

September 13, 2024

Franklin College Curriculum Committee
University of Georgia Curriculum Committee
University of Georgia

Dear Members of the College and University Curriculum Committees,

UGA's Institute for Artificial Intelligence (IAI) is an interdepartmental research and instructional unit jointly supported by the Office of the Senior Vice President for Academic Affairs and Provost and the Franklin College of Arts and Sciences. It offers three degree programs including the Doctor of Philosophy in Artificial Intelligence, the Master of Science in Artificial Intelligence, and the Bachelor of Arts in Cognitive Science. The Institute also participates in two joint undergraduate/graduate programs, which provide opportunities for students to attain an AB in Cognitive science or a BS in Computer science as well as an MS in Artificial Intelligence.

On behalf of the Franklin College of Arts and Sciences, I am pleased to offer my support for the newly proposed Certificate(s) in Artificial Intelligence Methods. This new academic program is an essential contribution to our instructional portfolio and creates a valuable pathway for UGA students to broaden their knowledge of artificial intelligence methods and its connections to society. The new Certificate(s) also aligns with our efforts to innovate in our academic programs and enable a student population with enhanced competencies in artificial intelligence, machine learning, and data science.

Sincerely,

Anna Stenport
Dean, Franklin College of Arts and Sciences

UNIVERSITY OF
GEORGIA
School of Computing

School of Computing
415 Boyd Research and Education Center
200 D.W. Brooks Drive
Athens, Georgia 30602
TEL 706-542-2911 | FAX 706-542-2966
computing.uga.edu

September 12, 2024

To Whom It May Concern

I am writing to express my full support for the proposed Certificate on Artificial Intelligence Methods. The School of Computing will be co-managing this certificate with Institute of AI (IAI). The School of Computing faculty are committed to prioritizing the offering of CSCI courses for the certificate. The certificate will be a strong curricular tool to empower students from School's majors (Computer Science and Data Science) as well as related majors like Computer Systems Engineering and potentially others.

Gagan Agrawal

Gagan Agrawal, Ph.D
UGA Foundation Professor and Director
School of Computing.

Department of Philosophy
Franklin College of Arts and Sciences

September 12, 2024

Khaled M. Rasheed
Professor, School of Computing
Interim Executive Director, IAI

Dear Professor Rasheed,

I am writing to confirm my strong support for the proposed Certificate on AI Methods. The Certificate includes one Philosophy course (PHIL 2500-Symbolic Logic) as a "Foundational AI Course." This is entirely appropriate, and we have the capacity to teach additional students who choose this option. There are a number of other cross-listed philosophy courses that appear in the list of electives. Again, these are appropriate, and we have the capacity to teach additional students.

Sincerely,

Aaron Meskin

Aaron Meskin

Aaron Meskin
Head and Professor
Department of Philosophy
University of Georgia
Athens, GA 30602-1627
Aaron.Meskin@uga.edu

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UNIVERSITY OF GEORGIA

Institute for Artificial Intelligence

September 13, 2024

To Whom It May Concern

I am writing to express my full support for the proposed Certificate on Artificial Intelligence Methods. The institute for AI Core faculty are committed to offering the required courses for the certificate with help from the School of computing and the Department of Philosophy faculty. The certificate will be a strong curricular tool to empower students from disciplines such as Computer Science, Data Science, Computer Systems Engineering and potentially others. I hope that it will serve as template for many other disciplines at UGA to create similar certificates.

Sincerely,

Khaled Rasheed

Khaled Rasheed
Professor, School of Computing &
Interim Executive Director of the Institute for Artificial Intelligence
University of Georgia
khaled@uga.edu

CURRICULUM VITA

NAME: Prashant Doshi

ADDRESS: School of Computing, 415 GSRC, Athens, GA 30602-7404
706-583-0827

HOMEPAGE: http://thinc.cs.uga.edu

EDUCATION:

PhD	July, 2005	University of Illinois, Chicago
MS	June, 2001	Drexel University, Philadelphia, PA
BE	May, 1999	V.J. Technological Institute, University of Mumbai, India

RESEARCH INTERESTS:

- Artificial Intelligence: Sequential decision theory, planning for single and multi-agent domains, probabilistic reasoning over time, particle filters
- Game Theory: Games of incomplete information, interactive epistemology
- Robotics: Inverse reinforcement learning and SLAM in multi-robot settings
- Past: Semantic Web: Ontologies, alignment and merging
- Past: Services-oriented Computing: Dynamic Web service composition, adaptation of Web service compositions, trust in compositions

POSITIONS:

August 2016 – onwards	Professor	University of Georgia
January 2015 – Nov 2015	Visiting Professor	University of Waterloo, Canada
August 2010 – July 2016	Associate Professor (tenured)	University of Georgia
August 2005 – July 2010	Assistant Professor	University of Georgia

HONORS & AWARDS:

- Best Application Paper Award, International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS), 2021
  - On "Cyber Attack Intent Recognition and Active Deception using Factored Interactive POMDPs".
- Founding Director, Faculty of Robotics at The University of Georgia, 2013-2018.
  - The Faculty of Robotics aims to significantly advance the fundamental science and engineering involved in robotics, facilitate diverse robotic applications with profound societal impact, and enhance the University's prominence in the discipline of robotics by serving as a singular hub for research in robotics that brings together interested University faculty and students from a variety of disciplines. More details are available at http://robotics.uga.edu
- Creative Research Medal, University of Georgia, 2011
  - Competitively awarded university-wide to 4-5 faculty each year who demonstrate exceptional accomplishments in creativity and research
- UGA Computer Science Department Outstanding Faculty Researcher Award, 2022, 2018, 2014, 2009
  - Competitively awarded to one-two faculty of the department each year for outstanding research accomplishments

RECENT GRANTS:

National Science Foundation

1. "RI:Medium:Collaborative: Automated Decision Making for Open Multi-Agent Systems", Prashant Doshi (PI; UGA), LeenKiat Soh (Co-PI; UNL), Adam Eck (Co-PI; Oberlin College), August 1, 2023 – July 31, 2027, $1.18 million (UGA portion: $467,141).
2. "STTR Phase I:Integrating Vision-Guided Collaborative Robots for Postharvest Processing of Produce", Evan Johnston (PI; InversAI, Inc.), Prashant Doshi (Co-PI; UGA), January 2023 – September 2023, $212,153 (UGA's portion: $66,123).

Defense Agencies

1. Army Research Lab, "Reinforcement Learning for Adversarial and Cooperative Multiagent Systems", Prashant Doshi (PI; UGA), October 2023 – September 2026, $346,713, *pending*
2. Army DEVCOM Data Analysis Center, "Test & Evaluation for Soldier-Machine Decision-Making Systems", Prashant Doshi (lead PI of UGA effort in the consortium led by Northeastern Univ.), S. Bhandarkar (Co-PI), J. Carmelio (Co-PI), J. Mohammadpour (Co-PI), S. Li (Co-PI), January 2022 – September 30, 2026, $4,427,260.

REFEREED AND ARCHIVAL PUBLICATIONS: (Total count 150+; Total citation count for all publications per Google Scholar: 5,600+; h-index: 33)**:**

1. Adam Eck, LeenKiat Soh, and Prashant Doshi, "Decision Making in Open Agent Systems", in AI Magazine, Vol. 44(4):508-523, Winter 2023.
2. Prasanth Sengadu Suresh, Yikang Gui, Prashant Doshi, "Dec-AIRL: Decentralized Adversarial IRL for Human-Robot Teaming", *Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS)*, pp. 1116-1124, 2023.
3. Saurabh Steixner-Kumar, Tessa Rusch, Prashant Doshi, Michael Spezio, and Jan Gläscher, "Humans depart from optimal computational models of interactive decision-making during competition under partial information", in Scientific Reports, Springer, Vol. 12:289, 19 pages, 2022.
4. Saurabh Arora, Bikramjit Banerjee, and Prashant Doshi, "Online Inverse Reinforcement Learning with Learned Observation Model", *Conference on Robot Learning (CoRL)*, pp.1468-1477, 2022.
5. Swaraj Pawar and Prashant Doshi, "Anytime Learning of Sum-Product and Sum-Product-Max Networks", *International Conference on Probabilistic Graphical Models (PGM)*, pp. 49-60, 2022.
6. Anirudh Kakarlapudi, Gayathri Anil, Adam Eck, Prashant Doshi, and Leen-Kiat Soh, "Decision-Theoretic Planning with Communication in Open Multiagent Systems", *Conference on Uncertainty in AI (UAI)*, pp. 938-948, 2022.
7. Keyang He, Prashant Doshi, and Bikramjit Banerjee, "Reinforcement Learning in Many-Agent Settings under Partial Observability", *Conference on Uncertainty in AI (UAI)*, pp. 780-789, 2022.
8. Prasanth Suresh and Prashant Doshi, "Marginal MAP Estimation for Inverse RL under Occlusion with Observer Noise", *Conference on Uncertainty in AI (UAI)*, pp. 1907-1916, 2022.
9. Kenneth Bogert and Prashant Doshi, "A Hierarchical Bayesian Process for Inverse RL in Partially-Controlled Environments", *Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS)*, pp. 145-153, 2022.
10. Saurabh Arora, Prashant Doshi, and Bikramjit Banerjee, "I2RL: Online Inverse Reinforcement Learning under Occlusion", in *Journal of Autonomous Agents and Multiagent Systems (JAAMAS)*, Vol. 35(1):e4, 2021.
11. Saurabh Arora and Prashant Doshi, "A Survey of Inverse Reinforcement Learning: Challenges, Methods, and Progress", in *Artificial Intelligence Journal (AIJ)*, Volume 297, e103500, 2021.
12. Tessa Rusch, Saurabh Steixner-Kumar, Prashant Doshi, Michael Spezio, and Jan Glascher, "Theory of Mind and Decision Science: Towards a Typology of Tasks and Computational Models", in Neuropsychologia, Elsevier, Vol. 146:107488, 2020.

<div align="center">

CURRICULUM VITAE
September 2024

</div>

NAME: Frederick Walter Maier

ADDRESS: Institute for Artificial Intelligence
The University of Georgia
515 Boyd Graduate Studies Research Center
Athens, GA 30602-7404
706/542-0359
fmaier@uga.edu

EDUCATION:

PhD	The University of Georgia	Computer Science	2007
MS	The University of Georgia	Artificial Intelligence	2002
MA	Tulane University	Philosophy	1999
BA	Spring Hill College	Philosophy	1996

PhD DISSERTATION:

"A Study of Defeasible Logics" (under the direction of Robert Robinson and Donald Nute)

POSITIONS:

- Associate Director for Academic Programs, Institute for Artificial Intelligence, Assistant Research Scientist, University of Georgia. — 2024-
- Associate Director, Institute for Artificial Intelligence, Assistant Research Scientist, University of Georgia. — 2013-2024
- Lecturer, Department of Computer Science, University of Georgia — 2012-2013
- Research Fellow, Aston Business School, Aston University — 2011-2012
- Visiting Researcher, Wright State University — 2010
- Postdoctoral Fellow, Florida Institute for Human and Machine Cognition — 2008-2010

    Other: Courtesy Faculty, UGA Department of Computer Science — 2014-Present

GRANTS:

<u>Current</u>

- [Awarded in 2022] Promoting Economic Resilience and Sustainability of the Eastern US Forests (PERSEUS). USDA 2023-68012-38992. Apr 1, 2023-Mar 31, 2028. UGA Subaward Amount: $2,714,283. Role: Co-PI, Credit: 10%.

<u>Prior Awards</u>

- Solar Technology Master Project (FP00005578). GA POWER COMPANY, June 12, 2015–May 31, 2019. Amount: $ 213,400. Role: Co-PI, Credit: 31%

- UGA Faculty Research Grants Program, $9,933.00, "Distributed Automated Reasoning in Mobile Devices", 2014-2015.

Prior Submissions, Not Funded

- [Submitted 2022] Theme 4: ADMIT: Advance Justifiable Decision Making for Multi-Agent Interactions. NSF FP00026438. Amount: $19,547,619. Jun 1, 2023-May 31, 2028. Role: Senior Personnel. Credit: 11%.
- [Submitted 2022] λ Neurolog: Learning assurable programs over neural abstractions. DARPA FP00027511. Amount (UGA): $506,827. Jan 5, 2023-Dec 31, 2026. Role: Co-PI, Credit: 33% (UGA: 100%).
- [Submitted 2021] Collaborative Research: RI: Neural Framework for Learning First and Second Order Logic Programs - Theory and Applications. NSF 21-616, 07/01/2022 – 06/30/26. Amount: $392,108 (US), Role: Co-investigator, Credit: 33%

REFEREED PUBLICATIONS:

Book Chapters

1. F.W. Maier (2016). A Primer on RDF and OWL. In P. Hitzler, A. Gangemi, K. Janowicz, K., A. Krisnadhi, V. Presutti (eds.), *Ontology Engineering with Ontology Design Patterns: Foundations and Applications*, 337-361. IOS Press, 2016.

2. W.D. Potter, E. Drucker, P. Bettinger, F. Maier, D. Luper, M. Martin, M. Watkinson, G. Handy, and C. Hayes. Diagnosis, configuration, planning, and pathfinding: Experiments in nature-inspired optimization, in Raymond Chiong & Sandeep Dhakal (eds.), *Natural Intelligence for Scheduling, Planning and Packing Problems*, 267-294. Springer-Verlag, Studies in Computational Intelligence (SCI) Series, 2009.

Journal Papers

3. Vance, J., K. Rasheed, A. Missaoui, and F. Maier. 2023. "Data Synthesis for Alfalfa Biomass Yield Estimation" *AI* 4(1): 1-15. doi.org/10.3390/ai4010001

4. Adke, S., Li, C., Rasheed, K. M., & Maier, F. W. (2022). Supervised and Weakly Supervised Deep Learning for Segmentation and Counting of Cotton Bolls Using Proximal Imagery. *SENSORS*, 22(10), 17 pages. doi:10.3390/s22103688

5. Whitmire, Christopher D.; Vance, Jonathan M.; Rasheed, Hend K.; Missaoui, Ali; Rasheed, Khaled M.; Maier, Frederick W. 2021. "Using Machine Learning and Feature Selection for Alfalfa Yield Prediction" *AI* 2, no. 1: 71-88. https://doi.org/10.3390/ai2010006

6. Frederick Maier, Pascal Hitzler, and Yue Ma. Paraconsistent OWL and Related Logics. *Semantic Web—Interoperability, Usability, Applicability,* 4(4):395-427, 2013.

7. Frederick Maier. Interdefinability of defeasible logic and logic programming under the well-founded semantics. *Theory and Practice of Logic Programming*, 13(1):107-142, 2013.

8. Frederick Maier and Donald Nute. Well-founded semantics for defeasible logic. *Synthese*, 176(2): 143-274, 2010.

9. Donald Nute, Walter D. Potter, Zhiyuan Cheng, Mayukh Dass, Astrid Glende, Frederick Maier, Cy Routh, Hajime Uchiyama, Jin Wang, Sarah Witzig, Mark Twery, Peter Knopp,

Scott Thomasma, and H. Michael Rauscher. A method for integrating multiple components in a decision support system. *Computers and Electronics in Agriculture*, 49(1):44-59, 2005.

10. Mark J. Twery, Peter Knopp, Scott Thomasma, H. Michael Rauscher, Donald Nute, Walter D. Potter, Frederick Maier, Jin Wang, Mayukh Dass, Hajime Uchiyama, Astrid Glende, and Robin E. Hoffman. NED-2: a decision support system for integrated forest ecosystem management. *Computers and Electronics in Agriculture*, 49(1):24-43, 2005.

11. Donald Nute, Walter D. Potter, Frederick Maier, Jin Wang, Mark J. Twery, H. Michael Rauscher, Peter Knopp, Scott Thomasma, Mayukh Dass, Hajime Uchiyama, and Astrid Glende. NED-2: an agent-based decision support system for forest ecosystem management. *Environmental Modelling and Software*, 19(9):831-843, 2004.

Conference Papers

12. Alkhoshi, E. E., Rasheed, K., Arabnia, H., Maier, F., & Gay, J. (2022). Comparisons of machine learning methods for human activity recognition using pseudo-free-living data. *In 2022 International Conference on Computational Science and Computational Intelligence*.

13. Vance, Jonathan M.; Whitmire, Christopher D.; Rasheed, Hend K.; Adkins, Christian; Missaoui, Ali; Rasheed, Khaled M.; Maier, Frederick W. Comparing Machine Learning Techniques for Alfalfa Biomass Yield Prediction. *Transactions on Computational Science and Computational Intelligence*, 2021.

14. Sam Sanders, Chris Barrick, Frederick W. Maier, Khaled Rasheed (2017). Solar Radiation Prediction Improvement Using Weather Forecasts. *ICMLA 2017*: 499-504.

15. Niazi A, Yazdansepas D, Gay JL, Maier F, Ramaswamy L, Rasheed K, Buman M. Statistical analysis of window sizes and sampling rates in human activity recognition. In *10th International Conference on Health Informatics (HEALTHINF 2017)*, Porto, Portugal, 21 Feb 2017 - 23 Mar 2017. Proceedings of the 10th International Joint Conference on Biomedical Engineering Systems and Technologies - Volume 5: HEALTHINF 2017. 319-319. 2017.

16. Niazi, A., Yazdansepas, D., Gay, J. L., Maier, F., Ramaswamy, L., Rasheed, K., & Buman, M. (2016). A Hierarchical Meta-Classifier for Human Activity Recognition. *In 15th IEEE International Conference on Machine Learning and Applications (ICMLA 2016)*. (pp. 81-86). Anaheim, CA.

17. Hamilton CR, Maier FW, Potter WD. Hourly Solar Radiation Forecasting Through Model Averaged Neural Networks and Alternating Model Trees. In *International Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems (IEA/AIE 2016), Morioka, Japan, 02 Aug 2016 - 04 Aug 2016*. Lecture Notes in Computer Science (LNCS) 9799. 737-750.

18. Yazdansepas, D., Niazi, A. H., Gay, J. L., Maier, F. W., Ramaswamy, L., Rasheed, K., & Buma, M. P. (2016). A Multi-Featured Approach for Wearable Sensor-based Human Activity Recognition. In *2016 IEEE INTERNATIONAL CONFERENCE ON HEALTHCARE INFORMATICS (ICHI 2016)* (pp. 423-431). Chicago, IL: IEEE.

19. Matthias Knorr, Pascal Hitzler, Frederick Maier. Reconciling OWL and Non-monotonic Rules for the Semantic Web. *20th European Conference on Artificial Intelligence (ECAI*

2012), Montpellier, France, August 27-31, 2012. Frontiers in Artificial Intelligence and Applications, vol. 242, 474-479. IOS Press, 2012.

20. Matthias Knorr, David Carral Martínez, Pascal Hitzler, Adila Alfa Krisnadhi, Frederick Maier, Cong Wang: Recent Advances in Integrating OWL and Rules (Technical Communication). *6th International Conference on Web Reasoning and Rule Systems (RR 2012), Vienna, Austria, September 10-12, 2012*. LNCS vol. 7497, 225-228. Springer, 2012.

21. Markus Krötzsch, Frederick Maier, Adila A. Krisnadhi, Pascal Hitzler. A Better Uncle for OWL: Nominal Schemas for Integrating Rules and Ontologies. *20th International World Wide Web Conference (WWW 2011), Hyderabad, India, March 28-April 1, 2011*.

22. Frederick Maier. Extending Paraconsistent *SROIQ*. *4th International Conference on Web Reasoning and Rule Systems (RR 2010), Bressanone/Brixen, Italy, September 22-24, 2010*. LNCS vol. 6333, 118-132. Springer, 2010.

23. Frederick Maier and Donald Nute. Ambiguity propagating defeasible logic and the well-founded semantics. In Michael Fisher, Wiebe van der Hoek, Boris Konev, and Alexei Lisitsa (eds.), 10th *European Conference on Logics in Artificial Intelligence (JELIA 2006), Liverpool, UK, September 13-15, 2006*. LNCS vol. 4160, 306-318. Springer, 2006.

24. Frederick Maier, Donald Nute, Walter D. Potter, Jin Wang, Mayukh Dass, Hajime Uchiyama, Mark J. Twery, Peter Knopp, Scott Thomasma, and H. Michael Rauscher. Efficient integration of prolog and relational databases in the NED intelligent information system. In Hamid R. Arabnia (ed.), *IKE 2003*, 364-369. CSREA Press, 2003.

25. Frederick Maier, Donald Nute, Walter D. Potter, Jin Wang, Mark J. Twery, H. Michael Rauscher, Peter Knopp, Scott Thomasma, Mayukh Dass, and Hajime Uchiyama. Prolog/RDBMS integration in the NED intelligent information system. In Robert Meersman and Zahir Tari (eds.), *CoopIS/DOA/ODBASE 2002*. LNCS vol. 2519, 528. Springer, 2002.

26. Walter D. Potter, Donald Nute, Jin Wang, Frederick Maier, Mark J. Twery, H. Michael Rauscher, Peter Knopp, Scott Thomasma, Mayukh Dass, and Hajime Uchiyama. The NED IIS project - forest ecosystem management. In Mark A. Musen, Bernd Neumann, and Rudi Studer (eds.), *Intelligent Information Processing*. IFIP Conference Proceedings vol. 221, 293-296. Kluwer, 2002.

Papers from Workshops and Other Meetings

27. Krishnan, G., Maier, F., & Ramyaa, R. Learning Rules with Stratified Negation in Differentiable ILP. *Advances in Programming Languages and Neurosymbolic Systems Workshop*. 2021.

28. Shi, Y., Renwick, M., & Maier, F. (2019). Improved Vowel Labeling for Prenasal Merger Using Customized Forced Alignment. Poster session presented at the meeting of 178th Meeting of the Acoustical Society of America. Retrieved from https://doi.org/10.1121/1.5137272

29. Akram Farhadi; Joshua J. Chern; Daniel Hirsh; Tod Davis; Joe Ming; Jennifer L. Wheelus; Frederick Maier; Khaled Rasheed. Predicting Intracranial Pressure (ICP) in Children Using Regression. Southern Data Science Conference, April 13-14 2018.

30. Markus Krötzsch, Frederick Maier, Adila Alfa Krisnadhi, Pascal Hitzler. Nominal Schemas for Integrating Rules and Description Logics. *2011 International Workshop on Description Logics (DL2011). Bacelona, Spain, July 13-16, 2011*.

31. Adila Krisnadhi, Frederick Maier, Pascal Hitzler. OWL and Rules. *Reasoning Web: Semantic Technologies for the Web of Data-7th International Summer School*. Galway, Ireland, August 23-27, 2011.

32. Raghava Mutharaju, Frederick Maier, Pascal Hitzler. A MapReduce Algorithm for EL^+. *2010 International Workshop on Description Logics (DL2010)*. Waterloo, Canada, May 4-7, 2010.

33. Frederick Maier and Donald Nute. Soundness and Completeness Results for the Defeasible Logic NDL. *36th Annual Meeting of the Society for Exact Philosophy*. Laramie WY, May 13-17, 2008.

34. Tarsem S. Purewal, Jr., Chris Bennett, and Frederick Maier. Embracing the social relevance: computing, ethics and the community. *SIGCSE Bulletin*, 39(1): 556-560, 2007.

35. Frederick Maier and Donald Nute. Relating defeasible logic to the well-founded semantics for normal logic programs. In Jürgen Dix and Anthony Hunter, editors, *Proceedings of NMR'06: Eleventh International Workshop on Non-monotonic Reasoning*, 295-302. IfI Technical Report Series, Clausthal University, June 2006.

36. John Dewey, Frederick Maier, H. Michael Rauscher, Mark Twery, Walter D. Potter, and Donald Nute. Prescriptive treatment optimization using a genetic algorithm: a tool for forest management. In A. Voinov, A.J. Jakeman, and A.E. Rizzoli (eds.), *Proceedings of the iEMSs Third Biennial Meeting: "Summit on Environmental Modelling and Software"*, Burlington, VT, July 2006. http://www.iemss.org/iemss2006/sessions/all.html, 2006.

37. Mark J. Twery, Peter D. Knopp, Scott A. Thomasma, H. Michael Rauscher, Donald E. Nute, Walter D. Potter, Frederick Maier, Jin Wang, Mayukh Dass, Hajime Uchiyama, Astrid Glende, and Robin E. Hoffman. NED-2: an integrated forest ecosystem management decision support system. In *Decision Support for Multiple Purpose Forestry*. Vienna, Austria, April 23-25, 2003. University of Natural Resources and Applied Life. CD-ROM, 2003.

38. Donald Nute, Walter D Potter, Frederick Maier, Jin Wang, Mark Twery, H Michael Rauscher, Pete Knopp, Scott Thomasma, Mayukh Dass, and Hajime Uchiyama. Intelligent model management in a forest ecosystem management decision support system. In A.E. Rizzoli and A.J. Jakeman (eds.), *Proceedings of the 1st Biennial Meeting of the Int. Environmental Modelling and Software Society. Lugano, Switzerland, June 2002*. http://www.iemss.org/iemss2002/proceedings/vol3.html, 2002.

39. Jin Wang, Walter D. Potter, Donald Nute, Frederick Maier, H. Michael Rauscher, Mark Twery, and Scott Thomasma. An intelligent information system for forest management: NED/FVS integration. In Nicholas L. Crookston and Robert N. Havis, editors, *Proceedings of the 2nd FVS Conference. Fort Collins CO, February 12-14, 2002*. Gen. Tech. Rep. RMRS-P-25. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, pages 189-195, 2002.

Papers, Other (Not Peer-Reviewed)

40. J Vance, K Rasheed, A Missaoui, F Maier, C Adkins, C Whitmire. Comparing Machine Learning Techniques for Alfalfa Biomass Yield Prediction. arXiv preprint: https://arxiv.org/abs/2210.11226. 2022.

GRADUATE ADVISEMENT:

As advisory committee chair:

1. Gayathri Anil (MSAI, 2024): Multi-Agent Reinforcement Learning for Task Open Systems. Co-Advisor with Prashant Doshi
2. Lauren Brakke (MSAI, 2024): Simplifying Random Forests Through Post-Hoc Rule Extraction
3. Ben Ware (MSAI, 2024): The Hidden Knowledge of Untrained Neural Language Models
4. Andrew Becker (MSAI, 2023): NSGA-VIT: An Evolutionary Approach to Vision Transformer Architecture Design
5. Elizabeth Hoepfinger (MSAI, 2023): Racial and Intersectional Debiasing of Contrastive Language Image Pretraining
6. Rex Vanhorn (MSAI, 2023): Fine-Tuning vs Context-Injection: Using GPT for Ambiguous Question-Answering on Proprietary Data
7. Sabri Sabri (MSAI, 2021): Arabic Image Captioning Using Deep Learning with Attention.
8. Aashish Yadavally (MSAI, 2020): Exploring Machine Learning Based Day-Ahead Solar Irradiance Forecasting Methodologies
9. Joshua Shannon (MSAI, 2019): Human Activity Recognition Using Pseudo Free-living Data
10. Zachary Jones (MSAI, 2019): Machine Learning for Solar Irradiance Forecasting
11. Yuanming (Jeremy) Shi (MSAI, 2019): An Investigation of Prenasal Merger in Southern American English Through Automatic Speech Recognition
12. John Gibbs (MSAI, 2019): Quasi-Semantic Image Manipulation via Deep Neural Networks
13. Justin Payan (MSAI, 2018): Keyphrase Extraction From Scientific Literature Using Joint Geometric Graph Embedding Matching
14. Ava Wright (MSAI, 2018): Rightful Machines
15. Sam Sanders (MSAI, 2017): Machine Learning Techniques for Weather Variable Forecasting
16. Anzah Niazi (MSAI, 2016): A Study in Human Activity Recognition: Hierarchical Classification and Statistical Analysis. Co-advisor with Khaled Rasheed.
17. Caitlin Cassidy (MSAI 2015): Between the Hedges: A Computational Analysis of Sentiment and Linguistic Hedging in Financial Documents
18. Dustin Cline (MSAI, 2015): Integrating Logic Programming with Description Logic Reasoning and Sensor Observation Management for Mobile Devices.
19. Venkata Siva Sai Krishna Balakavi (MSAI, 2015): Context Aware Multi-Agent Systems on Android Devices.

As advisory committee member:

1. Zainab Agboola (MS Computer Science): In Process
2. Kyle Becker (MSAI): In Process
3. Riley Hess (PhD Psychology): In Process
4. Bradley Howard (MSAI): In Process
5. Jie (Jason) Lian (MSAI): In Process
6. Subhadeep Sengupta (MSAI): In Process

7. Shailendra Sekhar Reddy Bathula (MSAI, 2024): Synthetic Instincts: Echoing Reinforcement Learning Agents for Behavior Tree Generation
8. Shashank Sai Bemberkar (MSAI, 2024): Challenges Facing Industry Leaders in Implementation of AI Within Manufacturing Environments
9. Apoorva Dasyam (MSAI, 2024): Alzheimer's Disease Classification Using Multimodal Machine Learning Algorithms
10. Daniel Harper (MSAI, 2024): Evolutionary Design Optimization For a Formula One Car and Track
11. Hannah Tawashy (MSAI, 2024): Exploring the Use of AI Agents to Simulate Human Behavior in Group Decision-Making
12. Enas Eitha M Alkhoshi (PhD Computer Science, 2023): Towards Robust Sensor-based Human Activity Recognition in Real-World Environments
13. Rachel Aubrey Mattson (MSAI 2023): Deep Representation Learning Of Mitochondrial Dynamics
14. Berta Franzluebbers (MSAI 2023): Modeling Syntactic Ambiguity With Dependency Parsing
15. Sanika Saurabh Katekar (MSAI 2023): Diffusioncnf: Learning Denoising Diffusion Models Via Conditional Normalizing Flows
16. Soham Dhananjay Sajekar (MSAI 2023): Diffusion Augmented Flows: Combining Normalizing Flows And Diffusion Models For Accurate Latent Space Mapping
17. Chenxiao Li (MSAI 2023): Cilia Segmentation Using U-Net with Gabor Filter
18. Saurabh Arora (PhD Computer Science, 2023): Framework and Algorithms for Online Inverse Reinforcement Learning Under Imperfect Observations
19. Alyssa Joaquin (MSAI 2023):   The Debiasing Effects Of Algorithmic Advice: Does Timing Matter?
20. Nikhil Ranjan (MSAI, 2022) Improving Directional Predication of IBM Stock Using Stacked Ensembling
21. Qin Yang (PhD Computer Science, 2022): Self-Adaptive Swarm System
22. Nathan Safir (MSAI, 2022) Variational Autoencoders For Semi-Supervised Deep Metric Learning
23. Shardul Deshmukh   (MSAI, 2022) Implementing Artificial Intelligence Into Team Decision Making
24. Margaret Schrayer (MSAI, 2022) Automating the Segmentation of Eye Movements in a Robotic Virtual Reality Environment
25. Eric Miller (MSAI, 2022) Engineering a Reliable Software Stack for Computer Vision on Small Satellites
26. Shrinidhi Adke (MSAI, 2021): Supervised and Weakly Supervised Deep Learning for Instance Segmentation and Counting of Plant Parts
27. Rutu Ghandi (MSAI, 2021): Multidimensional Attention Based Neural Network for 3D Image Segmentation
28. Nainder Singe Ghumman (MSAI, 2021): Training and Probing Language Models for Discerning between Speech of People with Aphasia and Healthy Controls
29. Caroline Hixon (MSAI,2021): Exploring Hindsight Bias Using Computational Modeling and Machine Learning Classification in Differing Domains
30. Anirudh Kakarlapudi (MSAI, 2021): Decision-Theoretic Planning with Communication in Open and Typed Multiagent Systems

31. Vikas Kunchala (MSAI, 2021): Predicting Undergraduate Student Dropout Using Artificial Intelligence, Big Data and Machine Learning
32. Tangrui Li (MSAI, 2021): Data-Driven Model-Theory Based Classification
33. Ryan McArdle (MSAI, 2021): Paraconsistent Propositional Inference Using Restricted Boltzmann Machines
34. Zachary Peck (MSAI, 2021): Scale, Abstraction, and Connectionist Models: On Parafinite Thresholds in Artificial Intelligence
35. Dylan Pozorski (MSAI, 2021): In Process
36. Nicholas Sterling (MS Computer Science, 2021): Machine Learning with Knowledge Graphs and Neural Networks
37. Angela Tsao (MSAI, 2021): Social Structure and Collective Intelligence in Probability-Based Particle Swarm Optimization for the Forest Planning Problem
38. Gengyu Zhang (MSAI, 2021): SIPOMDPLite-net: Lightweight Self-Interested Learning and Planning in Partially Observable Multiagent Settings with Sparse Interactions
39. Anna Gann (MSAI, 2020): Enhanced Visualization of Magnetic Resonance Brain Tumor Segmentation Volumes From Deep Automated Models
40. Hemanth Dandu (MSAI, 2020): Exploring the Limits of Zero-Shot Learning - How Low Can You Go?
41. Jingyi Li (MSAI, 2020): Twitter Sentiment Analysis During COVID-19 In Florida
42. Jayant Prashar (MSAI, 2020): Comparison and extension of CNNs for Saltmarsh images
43. Brij Rokad (MSAI, 2020): Quantifying Variability in Land-Surface Heterogeneity at the Global Scale Using Unsupervised Learning
44. Aditya Shinde (MSAI, 2020): Active Cyber Deception And Attacker Intent Recognition Using Factored Interactive POMDPs
45. Sumer Singh (MSAI, 2020): A Domain Adaptation Approach for Offensive Language Detection with Bidirectional Transformers
46. Christian McDaniel (MSAI, 2019): Artificial Intelligence, Reproducibility, and the Data Science Pipeline in Biomedical Research: an Application to Parkinson's Disease
47. Christopher Duncan Whitmire (MSAI, 2019): Machine Learning and Feature Selection for Biomass Yield Prediction Using Weather and Planting Data
48. Weiwen Xu (MSAI, 2019): Cillia Segmentation in Medical Videos with Fourier Convolutional Neural Network
49. Maulik Shah (MSAI, 2019): Scalable Individual Planning In Open and Typed Agent Systems
50. Kang Yuan (MSAI, 2019): 2.5D Pose Guided Human Image Generation
51. Raj Sivakumar (MSAI, 2019): Evaluating Dimensionality Reduction Techniques for Feature Generation from Parkisons' Brain Imaging
52. Shulin Zhang (MSAI, 2019): Human Brain Networks for Semantic Roles
53. Yan Du (MSAI, 2018): Automatic Detection and Segmentation of Greenhouse Fruit Using Deep Neural Networks
54. Chandler Kincaid (MSAI,2018): Genetic Sequence Classification and Phylogenetic Construction with N-Gram Methods
55. Andrew King (MSAI, 2018): A comparison and extension of deep learning methods for semantic segmentation in the context of coral reef survey imaging
56. Brent Lippert (MSAI, 2018): Prediction of Cancer-Related Mutation Impact on Protein Activity Using Machine Learning.

57. Liang Wang (MS Computer Science, 2018): Stock ranking with market microstructure, news and technical indicators
58. Vinamra Jain (MS Computer Science, 2017): Maximum Likelihood Approach For Model-Free Inverse Reinforcement Learning
59. Sara Vahid (MS Computer Science, 2017): Feature Selection in Medical Domains
60. Raghava Mutharaju (PhD Computer Science, Wright State University, 2016): Distributed Rule-Based Ontology Reasoning
61. Peter Geiger (MSAI, 2015): A Comparison of Novel Stochastic Optimization Methods.
62. MD Shahnawaz Khan (MSAI 2015): Building Snakes from DNA : A Step Towards Generalizing the Snake in the Box Problem.

UNIVERSITY AND DEPARTMENT SERVICE:

Continuing
- AI MS and PhD Program Graduate faculty
- Institute for Artificial Intelligence, Cognitive Science Curriculum Committee
- Institute for Artificial Intelligence, MS/PhD Curriculum Committee
- Institute for Artificial Intelligence, MS/PhD Admissions Committee
- Institute for Artificial Intelligence, AI Double Dawgs Pathway Admissions Committee

Other
- AI Research Day Organizing Committee, Spring 2024
- Kimberly Van Orman 3rd Year Review Committee (Chair), 2023
- AI Research Day Organizing Committee (Chair), Fall 2022.
- Philosophy Department AI Cluster Hire Search Committee (Member), Fall 2021-Spring 2022
- AI Institute Lecturer Search Committee (Chair), Fall 2019-Spring 2020
- Computer Science Department Assessment and Accreditation Committee, 2012-2013

OTHER SERVICE:

- Georgia DoEd AI Pathway Development Team (Subject Matter Expert), Fall 2020-Spring 2021

COURSES AS INSTRUCTOR OF RECORD:

Knowledge-Based Systems	Sp 2011, Sp 2014, Sp 2016, Sp 2017, Sp 2018, Sp 2020, Sp 2023, Sp 2024 (as CSCI 8800)
Artificial Intelligence	Fa 2015, Fa 2017, Fa 2018, Fall 2022
Logic and Logic Programming	Sp 2009, Sp 2022
Data Mining	Fa 2016, Su 2018, Fa 2018, Fa 2019, Fa 2020, Sp 2021, Fa 2021, Sp 2024, Fall 2024
Symbolic Programming	Fa 2008, Fa 2014
Introduction to Theory of Computing	Sp 2013, Su 2015
Discrete Mathematics for Computer Science	Fa 2012, Sp 2013
Introduction to Computing and Programming	Fa 2006, Sp 2007, Fa 2012
Computing, Ethics, and Society	Sp 2011
Symbolic Logic (instructor for partial term)	Fa 2009
Introduction to Personal Computing	Fa 2004, 2005, Su 2005, 2006

PROFESSIONAL ACTIVITIES:

Conferences, Workshops, and Meetings ("PC": program committee).

- Reviewer, International Conference on Industrial, Engineering & Other Applications of Applied Intelligent Systems, (IEA/AIE) 2021, 2022, 2023 (PC)
- Reviewer (PC), The Web Conference (WWW) 2018, 2019.
- Reviewer (PC), International Semantic Web Conference (ISWC) 2010, 2013, 2017, 2018.
- Reviewer (PC), Extended Semantic Web Conference (ESWC), 2011, 2013-2016.
- Reviewer (PC), International Joint Conferences on Artificial Intelligence (IJCAI), 2011, 2015, 2016.
- Reviewer (PC), AAAI Conference on Artificial Intelligence (AAAI-15), 2015.
- Reviewer (PC), International Conference on Ontologies, DataBases, and Applications of Semantics (ODBASE), 2011-2016;
- Reviewer (PC), International Conference on Artificial Intelligence: Methodology, Systems, Applications (AIMSA), 2014, 2016.
- Reviewer, International Conference on Web Reasoning and Rule Systems (RR), 2011.
- Reviewer, European Conference on Artificial Intelligence (ECAI) 2010.
- Reviewer, International Workshop on Description Logics (DL), 2010.

Journals

- Reviewer for *Computers and Electronics in Agriculture* (2023,2024).
- Reviewer for *Theory and Practice of Logic Programming* (2023).
- Reviewer for *Energy for Sustainable Development* (2020).
- Reviewer for *Information Science*, (INS) 2016.
- Reviewer for *Artificial Intelligence*, (AI) 2015.
- Reviewer for *Journal of Artificial Intelligence Research*, (JAIR) 2012.
- Reviewer, *Annals of Mathematics and Artificial Intelligence*, 2011.
- Reviewer, *International Journal on Semantic Web and Information Systems*, 2010.
- Reviewer, *Semantic Web—Interoperability, Usability, Applicability*, 2010.

CURRICULUM VITA
December 2023

NAME: Khaled Rasheed

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PLACE OF BIRTH: Egypt

EDUCATION:

Ph.D.	Computer Science	Rutgers University	January 1998
M.S.	Computer Science	Rutgers University	January 1995
B.S.	Computer Science	Alexandria University	June 1990

DISSERTATION:

"GADO: A Genetic Algorithm for Continuous Design Optimization", Haym Hirsh (advisor).

RESEARCH INTERESTS:

Artificial Intelligence Techniques: Genetic Algorithms, Evolutionary Computation, and Machine Learning
Artificial Intelligence Applications: Engineering Design Optimization, Bioinformatics, Human Activity Recognition, Biomass Yield Prediction

POSITIONS:

Aug. 2000 – present	Professor (promoted 8/2017), The University of Georgia, Department of Computer Science, Athens, GA
July 1999 – July 2000	Assistant Research Professor, Rutgers University, Department of Computer Science, New Brunswick, NJ
Jan. 1998 – June 1999	Research Associate, Rutgers University, Department of Computer Science, New Brunswick, NJ.
Sept. 1998 – Jan. 1999	Co-Adjutant, Rutgers University, Department of Computer Science, New Brunswick, NJ.
June 1994 – Dec. 1997	Research Assistant, Rutgers University, Department of Computer Science, New Brunswick, NJ.
Aug. 1995 – Dec. 1995	Teaching Assistant, Rutgers University, Department of Computer Science, New Brunswick, NJ.
Aug. 1993 – May 1994	Teaching Assistant, Rutgers University, Department of Computer Science, New Brunswick, NJ.

Aug. 1992 – May 1993	Teaching Assistant, Iowa State University, Department of Computer Science, Ames, Iowa.
Oct. 1990 – Aug. 1992	Teaching Assistant, Alexandria University, Department of Computer Science, Egypt.
June 1990 – Aug. 1992	Computer Consultant, World Health Organization (WHO), Alexandria, Egypt.
Oct. 1990 – Feb. 1991	Computer Consultant, Egyptian Governmental project for Decision Support, Alexandria, Egypt.

HONORS AND AWARDS:

- Member of the University of Georgia Teaching Academy (inducted 2019).
- Center for Teaching and Learning Senior Teaching Fellow, University of Georgia, 2019-2020.
- Center for Teaching and Learning "Teacher of the week" recognition, University of Georgia, 2016.
- Faculty Excellence in Teaching award, Computer Science department, University of Georgia, 2012.
- Outstanding Faculty Service award, Computer Science department, University of Georgia, 2011.
- Second Best Paper award in the *Twenty-fourth International Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems (IEA/AIE 2011)*.
- Nominated for best paper award in *The Genetic and Evolutionary Computation Conference (GECCO'2005)*
- Egyptian National Scholarship for academic excellence, 1985-1990
- Prize of the Egyptian Ministry of Education (third top student, mathematics section nationwide, secondary school final exam 1985)

GRANTS:

1. **Promoting Economic Resilience and Sustainability of the Eastern US Forests (PERSEUS)** (FP00027300)
   USDA NIFA, *April 1, 2023–March 31, 2028*
   Proposed amount: $ 2,714,283 (US), Role: Co-investigator of, Credit: 7%
   Application date: July 11, 2022, Funding type: Research, Status: Funded
2. National Institutes for Health (NIH), "Functional Annotation of Natural and Disease Variants in Tryosine Kinases", Natarajan Kannan (PI), Khaled Rasheed (Co-Investigator), $1,250,000, 2015 - 2021.
3. GA Power Company, "Solar Technology Master Project", David Gattie (PI), Khaled Rasheed (Co-PI), Don Potter (Co-PI) and Fred Maier (Co-PI), $213,400, 2015 – 2018.
4. UGA Faculty Research Grant, "Modeling, Evaluation & Design of External Skeletal Fixation Structures", Khaled Rasheed (PI), $5000, January, 2004 – December, 2004.
5. National Science Foundation (NSF), "Data Driven Design Optimization in Engineering Using Concurrent Integrated Experiment and Simulation," Doyle Knight (PI), Khaled Rasheed (Co-PI) and Yogesh Jaluria, Gregory Elliott, Noshir Langrana (Co-PIs), $1,200,000, 2001 - 2004.

6. Rutgers University – Subcontract from DARPA Grant. "Self Adaptive GA-Based Design Optimization using Reduced Models", Khaled Rasheed (PI), $60,000, November 2000 - June 2002.
7. Defense Advanced Research Projects Agency (DARPA), Department of Defense, "Self-Adaptive Software for Automated Design of Complex Engineering Systems," Saul Amarel (PI), Louis Steinberg (Co-PI), and Khaled Rasheed (Investigator), $540,000, 1998-2001.
8. National Science Foundation (NSF), "Utility-Based Control of Hierarchical Design," Louis Steinberg (PI), Robert Berk (Co-PI), and Khaled Rasheed (Investigator), $349,000, 1998-2001.
9. National Aeronautics and Space Agency (NASA/Ames), "Design Optimization in the Domain of Overset Grid Generation," Saul Amarel (PI), Donald Smith (Co-PI), and Khaled Rasheed (Investigator), $50,000, 1998-1999.

SUBMITTED GRANTS:

PROFESSIONAL ACTIVITIES:

- ❖ Journal Associate Editor:
  - ➢ International Journal on Computer Vision, Machine Learning, and Data Mining (CVMLDM)
- ❖ Journal guest editor:
  - ➢ Soft Computing Journal: special issue on approximation and learning in evolutionary computation (2003)
- ❖ Journal Editorial Board Member:
  - ➢ Applied Intelligence
  - ➢ JSM Computer Science & Engineering
- ❖ Journal reviewer:
  1. IEEE Intelligent Systems
  2. IEEE Transactions on Evolutionary Computation
  3. IEEE Transactions on Systems, Man and Cybernetics (Part A)
  4. IEEE/ACM Transactions on Computational Biology and Bioinformatics
  5. Journal of Machine Learning Research (JMLR)
  6. Machine Learning Journal (MLJ)
  7. Journal of Artificial Intelligence Research (JAIR)
  8. Artificial Intelligence in Engineering Design and Manufacturing (AIEDAM)
  9. International Association for Mathematics and Computers in Simulation (IMACS)
  10. Applied Intelligence
  11. Soft Computing and Automation Journal
  12. Pattern Recognition Letters
  13. Aerospace Science and Technology
  14. Journal of Computing and Information Science in Engineering (JCISE)
  15. Plos One
  16. Computational and Structural Biotechnology Journal (CSBJ) (2021)
  17. BMC Medical Informatics and Decision Making (2022)
- ❖ Conference Co-Organizer and Panelist:
  Envisioning 2050 in the Southeast: AI-Driven Innovations in Agriculture (2022)
- ❖ Workshop Organizer:
  - ➢ Genetic and Evolutionary Computation Conference (GECCO'2002) Workshop on Approximation and Learning in Evolutionary Computation.

- ➢ Genetic and Evolutionary Computation Conference (GECCO'2003) Workshop on Learning and Adaptation in Evolutionary Computation.
- ❖ Tutorial Organizer:
  - ➢ Genetic and Evolutionary Computation Conference (GECCO'2005) Tutorial on Fitness Approximation in Evolutionary Computation.
- ❖ Conference Session Chair:
  - ➢ Int'l. Conf. on Artificial Intelligence (ICAI'2010, 2016)
  - ➢ Int'l. Conf. on Genetic and Evolutionary Methods (GEM'2010, 2013)
  - ➢ The Ninth International Conference on Machine Learning and Applications (ICMLA'2010)
  - ➢ The IMACS World Congress (2009)
  - ➢ Genetic and Evolutionary Computation Conference (GECCO'2002, 2003, 2004, 2005,2008)
  - ➢ The International Multi-conferences in Computer Science (MLMTA'2004)
  - ➢ Third Annual Genetic Programming Conference (GP'98)
- ❖ Program committee member:
  - ➢ Genetic and Evolutionary Computation Conference (GECCO'99, 2000, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2013, 2014, 2015, 2016, 2017, 2018, 2019,2020,2021,2022,2023)
  - ➢ The Congress on Evolutionary Computation (2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2013, 2014, 2015, 2016, 2017, 2018, 2019,2020)
  - ➢ Parallel Problem Solving from Nature (PPSN 2004, 2006, 2012, 2014, 2016, 2018, 2020, 2022)
  - ➢ IASTED International Conference on Artificial Intelligence and Soft Computing (ASC 2009, 2011)
  - ➢ European Conference on the Applications of Evolutionary Computation (EvoApplications'2010, 2011)
  - ➢ IASTED International Conference on Computational Bioscience (CompBio 2010)
  - ➢ The European Workshop on Evolutionary Algorithms in Stochastic and Dynamic Environments (2003, 2004, 2005).
  - ➢ International Conference on Machine Learning (ICML'2001)
  - ➢ The 39th Annual ACM Southeast Conference (2001)
- ❖ Grant Proposal Reviewer
  - ➢ National Science Foundation, 2018.
  - ➢ Oak Ridge Associated Universities, Inc. (ORAU), 2016.
  - ➢ Netherlands Organization for Scientific Research, 2008.
  - ➢ North Carolina Biotechnology Center, 2005.
- ❖ Member of Panels and Evaluation Teams:
  - ➢ Participant in the Information Technology Research (ITR) PI meeting and research assessment at the National Science Foundation 2004.

PUBLICATIONS:

Book Chapters:

1. Dongsheng Che, Qi Liu, Khaled Rasheed and Xiuping Tao, "Decision Tree and Ensemble Learning Algorithms with Their Applications in Bioinformatics", in *Software Tools and Algorithms for Biological Systems,* Springer-Verlag, pp. 191 – 199, 2011.

2. Liang Shi and Khaled Rasheed, "A Survey of Fitness Approximation Methods Applied in Evolutionary Algorithms", in *Computational Intelligence in Expensive Optimization Problems*, Springer-Verlag, pp. 3 – 28, 2010.
3. Khaled Rasheed, Xiao Ni and Swaroop Vattam. "Methods for Using Reduced Models to Speed Up Genetic Algorithm Optimization: Informed Operators and Genetic Engineering", in *Knowledge Incorporation in Evolutionary Computation*, Springer-Verlag, 2003.

Submitted Book Chapters:

Journal Publications:

4. Guoming Li, Baoming Li, Zhengxiang Shi, Guoyu Lu, Lilong Chai, Khaled M. Rasheed, Prafulla Regmi. "Inter-individual distances and orientations of laying hens under eight stocking densities measured by integrative deep learning techniques", *Poultry Science, 102(11)*. 2023
5. Iman, Mohammadreza, Hamid Reza Arabnia, and Khaled Rasheed. "A Review of Deep Transfer Learning and Recent Advancements" Technologies 11, no. 2: 40. https://doi.org/10.3390/technologies11020040, 2023.
6. Jonathan M Vance, Khaled Rasheed, Ali Missaoui, and Frederick W Maier, "Data synthesis for alfalfa biomass yield estimation", *AI* **4.1**, 2023.
7. Shrinidhi Adke, Changying Li, Khaled M. Rasheed, and Frederick W. Maier, "Supervised and Weakly Supervised Deep Learning for Segmentation and Counting of Cotton Bolls Using Proximal Imagery", *Sensors* **22(10):**3688, 2022.
8. Christopher D Whitmire, Jonathan M Vance, Hend K Rasheed, Ali Missaoui, Khaled M Rasheed, Frederick W Maier, "Using Machine Learning and Feature Selection for Alfalfa Yield Prediction", *AI* **2.1**, PP 71-88, 2021.
9. Soheyla Amirian, Khaled Rasheed, Thiab Taha and Hamid Arabnia, "Automatic Image and Video Caption Generation with Deep Learning: A Concise Review and Algorithmic Overlap", *IEEE Access,* 2020.
10. Liang-Chin Huang, Wayland Yeung, Ye Wang, Huimin Cheng, Aarya Venkat, Sheng Li, Ping Ma, Khaled Rasheed, Natarajan Kannan, "Quantitative Structure-Mutation-Activity Relationship Tests (QSMART) model for protein kinase inhibitor response prediction", in *BMC Bioinformatics*. **21(1):** 520, 2020.
11. Rahil Taujale, Aarya Venkat, Liang-Chin Huang, Zhongliang Zhang, Wayland Yeung, Khaled Rasheed, Sheng Li, Arthur S. Edison, Kelley W. Moremen, Natarajan Kannan. Deep evolutionary analysis reveals the design principles of fold A glycosyltransferases. *eLife*, Vol.9, e54532, 2020.
12. Akram Farhadi, Joshua J. Chern, Daniel Hirsh, Tod Davis, Mingyoung Jo, Frederick Maier, and Khaled Rasheed, "Intracranial Pressure (ICP) Forecasting in Children Using Dynamic Averaging of Time Series Data", in *Forecasting,* Vol. **1**, pp. 47 – 58, 2019.
13. Mohammad Mohebbi, Liang Ding, Russell Malmberg, Cory Momany, Khaled Rasheed, and Liming Cai, "ACCURATE PREDICTION OF HUMAN MIRNA TARGETS VIA GRAPH MODELING OF MIRNA-TARGET DUPLEX", in *Journal of Bioinformatics and Computational Biology*, **18(86)**, doi: 10.1142/S0219720018500130, 2018.
14. Khalifeh AlJadda, Mohammed Korayem, Camilo Ortiz, Trey Grainger, John A Miller, Khaled Rasheed, Krys Kochut, William York, Rene Ranzinger, Melody Porterfield, Hao Peng, "Mining Massive Hierarchical Data Using a Scalable Probabilistic Graphical Model" in *Information Sciences*, Vol: 425, pp. 62 – 75, doi:10.1016/j.ins.2017.10.014, 2018.

15. Daniel McSkimming, Khaled Rasheed, and Natarajan Kannan, "Classifying kinase conformations using a machine learning approach", in *BMC Bioinformatics*; **18(86)**, doi:10.1186/s12859-017-1506-2, 2017.
16. Amna Basharat, Khaled Rasheed and I. Budak Arpinar, "A Conceptual Framework For Linked Open Islamic Knowledge", *The International Journal on Islamic Applications in Computer Science and Technology (IJASAT)*, **4(2)**, pp. 16 – 25, 2016.
17. ManChon U, Eric Talevich, Samiksha Katiyar, Khaled Rasheed, and Natarajan Kannan, "Prediction and Prioritization of Rare Oncogenic Mutations in the Cancer Kinome Using Novel Features and Multiple Classifiers", in *PLOS Computational Biology*, **10(4):** e1003545. doi:10.1371/journal.pcbi.1003545, 2014.
18. Rahila Umer, Sohrab Khan, Aftab Ahmed, Khaled Rasheed and Tianming Liu, "Prediction of Possible conversion from MCI to AD using Machine learning", in the *International Journal of Basic and Applied Sciences*, **1(2)**, pp. 100-108, 2012.
19. Dongsheng Che, C. Hockenbury, R. Marmelsteinand, and Khaled Rasheed. "Classification of genomic islands using decision trees and their ensemble algorithms", *BMC Genomics*, **11(**suppl **2)**:S1, 2010.
20. Bo Qian and Khaled Rasheed, "Foreign Exchange Market Prediction with Multiple Classifiers", *Journal of Forecasting*, **29(3)**, pp. 271 – 284, 2010.
21. Hamid R. Arabnia, Junfeng Qu, Yinglei Song, Khaled Rasheed, and Byron Jeff, "Clustering Time Series Online in a Transformed Space", *The Ubiquitous Computing and Communication Journal (UBICC; http://www.ubicc.org),* Vol**. 3(7)** pages, 2008.
22. Jaymin Kessler, Khaled Rasheed and Budak Arpinar, "Using Genetic Algorithms to Reorganize Superpeer Structure in Peer to Peer Networks", *Applied Intelligence: The International Journal of Artificial Intelligence, Neural Networks and Complex Problem-Solving Technologies*, **26(1)**, pp. 35 – 52, 2007.
23. Bo Qian and Khaled Rasheed, "Stock Market Prediction with Multiple Classifiers", *Applied Intelligence: The International Journal of Artificial Intelligence, Neural Networks and Complex Problem-Solving Technologies*, **26(1)**, pp. 25 – 33, 2007.
24. Deepti Chafekar, Liang Shi, Khaled Rasheed and Jiang Xuan, "Constrained Multi-objective GA Optimization Using Reduced Models", *IEEE Transactions on Systems, Man and Cybernetics,* **35(2)**, pp. 261 – 265, 2005.
25. Khaled Rasheed, Xiao Ni and Swaroop Vattam, "Comparison of Methods for Developing Dynamic Reduced Models for Design Optimization", *The Soft Computing Journal,* (online) 2003, (in print) **9(1)**, pp. 29 – 37, 2005.
26. Jack Smith, Doyle Knight, Joachim Kohn, Khaled Rasheed and Norbert Weber, "Using Surrogate Modeling in the Prediction of Fibrinogen Adsorption onto Polymer Surfaces", *Journal of Chemical Information and Computer Sciences*, **44**:1088—1097, 2004.
27. L. Wu, W.D. Potter, K. Rasheed, J. Ghent, D. Twardus, H. Thistle and M. Teske, " Nature Inspired Heuristics in Aerial Spray Deposition Management", *The Journal of Applied Systems Studies,* **4(2)**, 2003.
28. Anil Bahuman, Khaled Rasheed, and Benjamin Bishop, "Evolutionary Design Automation of VLSI Standard Cells", *The Journal of Applied Systems Studies,* **4(2)**, 2003.
29. Khaled Rasheed and Haym Hirsh, "Learning to be Selective in Genetic-Algorithm-Based Design Optimization", *Artificial Intelligence for Engineering Design, Analysis and Manufacturing*, **13:**157-169, 1999.
30. Michael Blaize, Doyle Knight, and Khaled Rasheed, "Automated Optimal Design of Two Dimensional Supersonic Missile Inlets", *The Journal of Propulsion and Power*, **14**(6): 890-898, 1998.
31. Khaled Rasheed, Haym Hirsh and Andrew Gelsey, "A Genetic Algorithm for Continuous Design Space Search", *Artificial Intelligence in Engineering*, **11**(3):295-305, 1997.

32. G.-C. Zha, D. Smith, M. Schwabacker, K. Rasheed, A. Gelsey, D. Knight and Martin Hass, "High Performance Supersonic Missile Inlet Design Using Automated Optimization", *Journal of Aircraft*, **34**(6):697-705, 1997.

33. A. Gelsey, D. Smith, M. Schwabacker, K. Rasheed, and K. Miyake, "A Search Space Toolkit", *Decision Support Systems*, **18**:341-356, 1996.

Submitted Journal Publications:

Conference Publications:

34. Afsaneh Shams, Drew Becker, Kyle Becker, Soheyla Amirian and Khaled Rasheed." Evolving Efficient CNN Based Model for Image Classification". Proceedings of the *International Conference on Artificial Intelligence (ICAI'23),* 2023.

35. Abolfazl Farahani, Navid Hashemi Tonekaboni, Khaled Rasheed, and Hamid R. Arabnia. "CLPL: A Self-supervised Contrastive Learning Pseudo-Labeling Framework for Tabular Data". In proceedings of the *International Conference on Computational Science and Computational Intelligence, 2022.*

36. Enas E. Alkhoshi, Khaled M. Rasheed, Hamid R. Arabnia, Frederick W. Maier, and Jennifer L. Gay. "Comparisons of Machine Learning Methods for Human Activity Recognition Using Pseudo-Free-Living Data". In proceedings of the *International Conference on Computational Science and Computational Intelligence, 2022.*

37. Abolfazl Farahani, Navid Hashemi Tonekaboni, Khaled Rasheed, and Hamid R. Arabnia. "HPGER: Integrating Human Perception into Group Emotion Recognition". In proceedings of the *International Conference on Computational Science and Computational Intelligence, 2022.*

38. Mohammadreza Iman, John A. Miller, Khaled Rasheed, Robert M. Branch, and Hamid R. Arabnia. "EXPANSE: A Continual and Progressive Learning System for Deep Transfer Learning". In proceedings of the *International Conference on Computational Science and Computational Intelligence, 2022.*

39. Mehdi Assefi, Mehdi Bahrami, Sarthak Arora, Thiab Taha, Hamid R. Arabnia, Khaled Rasheed and Wei-Peng Chen. "An Intelligent Data-Centric Web Crawler Service for API Corpus Construction at Scale". In *Proceedings of The IEEE International Conference on Web Services (ICWS'22), 2022.*

40. Farzan Shenavarmasouleh, Farid Ghareh Mohammadi, Khaled M. Rasheed, and Hamid R. Arabnia. "Recent Applications of Deep Learning in Health Informatics: A Review". In *Proceedings of The 8th International Conference on Health Informatics & Medical Systems (HIMS'22)*, 2022. (Acceptance rate: 19%)

41. Sahar Voghoei, James M. Byars, Khaled M. Rasheed, and Hamid R. Arabnia. "Decoding the Alphabet Soup of Degrees in the United States Postsecondary Education System Through Hybrid Method: Database and Text Mining". Transactions on Computational Science & Computational Intelligence (accepted 2021)

42. Farid Ghareh Mohammadi, Farzan Shenavarmasouleh, Khaled Rasheed, Thiab Taha, M. Hadi Amini, Hamid R. Arabnia. "The Application of Evolutionary and Nature Inspired Algorithms in Data Science and Data Analytics". in *Proceedings of The International Conference on Computational Science and Computational Intelligence (CSCI'21)*, 2021.

43. Jonathan M. Vance, Christopher D. Whitmire, Hend K. Rasheed, Christian Adkins, Ali Missaoui, Khaled M. Rasheed, and Frederick W. Maier. "Comparing Machine Learning Techniques for Alfalfa Biomass Yield Prediction". *In Proceedings of The 19th International Conference on Scientific Computing; (CSC'2021)*, 2021

44. Amirian, Soheyla, Thiab R. Taha, Khaled Rasheed, and Hamid R. Arabnia, "Generative Adversarial Network Applications in Creating a Meta-Universe", in *Proceedings of The International Conference on Computational Science and Computational Intelligence (CSCI'21)*, 2021.

45. Amirian, Soheyla, Thiab R. Taha, Khaled Rasheed, and Hamid R. Arabnia, "An Integrated Approach for Video Captioning and Applications", The 2021 World Congress in Computer Science, Computer Engineering, and Applied Computing (CSCE'21), 2021.

46. Soheyla Amirian, Khaled Rasheed, Thiab R. Taha, and Hamid R. Arabnia. "Automatic Generation of Descriptive Titles for Video Clips Using Deep Learning". The *International Conference on Artificial Intilligence (ICAI'20),* 2020.

47. Soheyla Amirian, Abolfazl Farahani, Hamid R. Arabnia. Khaled Rasheed, and Thiab R. Taha. "The use of video captioning for fostering physical activity". In *Proceedings of The International Conference on Computational Science and Computational Intelligence (CSCI'20)*, 2020.

48. Abolfazl Farahani, Sahar Voghoei, Khaled Rasheed, and Hamid R. Arabnia. "A Brief Review of Domain Adaptation". The *International Conference on Information & Knowledge Engineering (IKE'20),* 2020.

49. Abolfazl Farahani, Behrouz Pourshojae, Khaled Rasheed, and Hamid R. Arabnia. "A Concise Review of Transfer Learning". In *Proceedings of The International Conference on Computational Science and Computational Intelligence (CSCI'20)*, 2020.

50. Mohammadreza Iman, Amy Giuntini, Hamid Reza Arabnia, and Khaled Rasheed, "A Comparative Study of Machine Learning Models for Tabular Data Through Challenge of Monitoring Parkinson's Disease Progression Using Voice Recordings". In *Proceedings of The 6th International Conference on Health Informatics & Medical Systems (HIMS'20),* 2020.

51. S Amirian, K Rasheed, TR Taha, and HR Arabnia, "Image Captioning with Generative Adversarial Network", In *Proceedings of the International Conference on Computational Science and Computational Intelligence (CSCI),* 2019.

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85. Boseon Byeon and Khaled Rasheed, "Bayesian Networks and Genetic Algorithms for Promoter Recognition", in *Proceedings of the IASTED International Conference on Computational Bioscience (Compbio 2010),* pp. 593 – 598, 2010.

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97. Glenn F. Matthews and Khaled Rasheed, "Temporal Difference Learning for Nondeterministic Board Games", in *Proceedings of the Int'l Conf. on Artificial Intelligence (ICAI'08) and Proceedings of the Int'l Conf. on Machine Learning; Models, Technologies and Applications (MLMTA'08)*, USA, pp. 800 – 806, 2008. (Acceptance rate: 27%)

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119.   Anil Bahuman, Khaled Rasheed and Benjamin Bishop, "An Evolutionary Approach for VLSI Standard Cell Design", in *Proceedings of the Congress on Evolutionary Computation (CEC'2002)*, pp. 431-436, 2002.

120.   Benjamin Bishop, Khaled Rasheed, and Anil Bahuman, "VLSI Standard Cell Design Using Genetic Algorithms", in *Proceedings of the 39th Annual ACM Southeast Conference*, pp. 44-45, 2001.

121.   Gerald Carrier, Doyle Knight, Khaled Rasheed, and Xavier Montazel, "Multi-criteria Design Optimization of a Two dimensional Supersonic Inlet", *The 39th AIAA Aerospace Sciences Meeting and Exhibit*, AIAA Paper No. 2001-1064, 2001.

122.   Khaled Rasheed and Haym Hirsh, "Informed operators: Speeding up genetic-algorithm-based design optimization using reduced models", in *Proceedings of the Genetic and Evolutionary Computation Conference (GECCO'2000)*, pp. 628-635, 2000. (Acceptance rate 47.3%)

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127.   Christophe Bourdeau, Gerald Carrier, Doyle Knight and Khaled Rasheed, "Three-dimensional Optimization of Supersonic Inlets", *The 35th AIAA/ASME/SAE/ASEE Joint Propulsion Conference*, AIAA Paper No. 99-2108, 1999.

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129. Khaled Rasheed, "Improving Genetic Algorithm Convergence Using Guided Crossover", in *Proceedings of the Third Annual Conference on Genetic Programming (GP-98)/Symposium on Genetic Algorithms (SGA-98)*, p. 591 (poster), 1998.

130. Michael Blaize, Doyle Knight, and Khaled Rasheed, "Automated Optimal Design of Two Dimensional High Speed Missile Inlets", *The 36th AIAA Aerospace Sciences Meeting and Exhibit*, AIAA Paper No. 98-0950, 1998.

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Submitted Conference Publications:

Workshop Publications:

135. Amna Basharat, Bushra Abro, Budak Arpinar, and Khaled Rasheed, "Semantic Hadith: Leveraging Linked Data Opportunities for Islamic Knowledge". Linked Data on the Web workshop of *the 25th International World Wide Web Conference*, 2016.

136. Anirban Mukhopadhyay, Chul Woo Lim, Suchendra Bhandarkar, Hanbo Chen, Tianming Liu, Khaled Rasheed and Thiab Taha. "Analysis Of Surface Folding Patterns Of DICCCOLS Using The Geodesic Field Estimate", *The 16th International Conference on Medical Image Computing and Computer Assisted Intervention (*MICCAI'2013) Workshop on Mesh Processing in Medical Image Analysis, 2013.

137. Jiang Xuan, Deepti Chafekar and Khaled Rasheed, "Constrained Multi-objective GA Optimization Using Reduced Models", *The Genetic and Evolutionary Computation Conference (GECCO'2003)* workshop on learning and adaptation in evolutionary computation, July 2003.

138. Khaled Rasheed, Swaroop Vattam and Xiao Ni, "Comparison of Methods for Using Reduced Models to Speed Up Design Optimization", in *The Genetic and Evolutionary Computation Conference (GECCO'2002)* workshop on approximation and learning in evolutionary computation, 2002.

139. Brian Davison and Khaled Rasheed, "Effect of Global Parallelism on a Steady State Genetic Algorithm", *Evolutionary Computing and Parallel Processing workshop at the Genetic and Evolutionary Computation Conference*, (GECCO'99), 1999.

140. Khaled Rasheed and Andrew Gelsey, "Adaptation of Genetic Algorithms for Engineering Design Optimization", *Artificial Intelligence in Design (AID'96)*, Workshop on Evolutionary Systems in Design, 1996.

Submitted Workshop Publications:

Technical Reports:

141.　　Khaled Rasheed, "GADO: A Genetic Algorithm for Continuous Design Optimization", Technical Report DCS-TR-352, Department of Computer Science, Rutgers University, New Brunswick, NJ, 1998. Ph.D. Thesis.

INVITED TALKS:

1. "Analysis of the Effect of Distance Metric Across Languages on Verse Similarity in The Qur'An", in *the 2016 Int'l. Conf. on Artificial Intelligence (ICAI'2016)*', 2016.
2. "Towards Linked Open Islamic Knowledge using Human Computation and Crowd-sourcing", in *the third Int'l. Conf. on Islamic Application in Computer Science and Technologies (IMAN'2015)*', 2015.
3. "Comparative Study of Verse Similarity for Multi-lingual Representations of the Qur'an", in *the Int'l. Conf. on Artificial Intelligence (ICAI'2015)*', 2015.
4. "Automated scoring of Levels of Integrative Complexity using Machine Learning and Natural Language Processing", in *the Int'l. Conf. on Artificial Intelligence (ICAI'2015)*', 2015.
5. "Automated scoring of the Level of Conceptual/Integrative Complexity from Text using Machine Learning", in *the International Conference on Machine Learning and Applications (ICMLA 2014),* 2014.
6. "Artificial Intelligence in Clothing Fashion", in *the 2014 Int'l. Conf. on Artificial Intelligence (ICAI'2014)*', 2014.
7. "Evolmusic: A Prefernce Learning Accompanist", in *the 2014 Int'l. Conf. on Genetic and Evolutionary Methods (GEM'2014)*', 2014.
8. "Evac: An Evolutionary Accompanist", in *the 2013 Int'l. Conf. on Genetic and Evolutionary Methods (GEM'2013)*, 2013.
9. "A Fast Parameter Setting Strategy for Particle Swarm Optimization and Its Application in Urban Water Distribution Network Optimal Design", in *the 2013 Int'l. Conf. on Genetic and Evolutionary Methods (GEM'2013)*, 2013.
10. "Extracting the Best Features for Predicting Stock Prices Using Machine Learning", in *the 2012 Int'l. Conf. on Artificial Intelligence (ICAI'2012)*, 2012.
11. "Stock Price Prediction Using Genetic Algorithms and Evolution Strategies", in *the 2012 Int'l. Conf. on Genetic and Evolutionary Methods (GEM'2012)*, 2012.
12. "A Surrogate-assisted Linkage Inference Approach in Genetic Algorithms", in *the Genetic and Evolutionary Computation Conference (GECCO'2011),* 2011.
13. "GART: A Genetic Algorithm based Real Time System Scheduler", in *the IEEE Congress on Evolutionary Computation (CEC' 2011),* 2011.
14. "Evolving Efficient Sensor Arrangement and Obstacle Avoidance Control Logic for a Miniature Robot", in *the Twenty-fourth International Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems (IEA/AIE 2011)*, 2011.
15. "Bayesian Networks and Genetic Algorithms for Promoter Recognition", in *the IASTED International Conference on Computational Bioscience (CompBio 2010),* 2010.
16. "Application of Machine Learning Algorithms for Binning Metagenomic Data", in *the International Conference on Bioinformatics and Computational Biology (BIOCOMP'2010),* 2010.
17. "A Machine Learning Approach for Sensitivity Inference in Genetic Algorithms", in *the 2010 Int'l. Conf. on Genetic and Evolutionary Methods (GEM'2010),* 2010.
18. "Classification of Genomic Islands Using Decision-tree Based Algorithms", in *the International Conference on Bioinformatics and Computational Biology (BIOCOMP'09),* 2009.

19. "Genetic-Algorithm-Based feature Selection for Biomaterial Modeling", in *the IMACS World Congress*, 2009.
20. "Using Genetic Algorithms for Simultaneous Noise Removal and Feature Selection in Classification and Regression Problems", in *the International Conference on Artificial Intelligence (ICAI'09)*, 2009.
21. "Simultaneously Removing Noise and Selecting Relevant Features for High Dimensional Noisy Data", in *Proceedings of the Seventh International Conference on Machine Learning and Applications (ICMLA'08),* pp. 147 – 152, 2008. (Acceptance rate: 50%)
22. "ASAGA: An Adaptive Surrogate-Assisted Genetic Algorithm", in *the Genetic and Evolutionary Computation Conference (GECCO'2008)*, 2008.
23. "Temporal Difference Learning for Nondeterministic Board Games", in *the Int'l Conf. on Machine Learning; Models, Technologies and Applications (MLMTA'08)*, 2008.
24. "Improving GA Performance Using Relative Fitness", in *the International Conference on Genetic and Evolutionary Methods* (GEM'07), 2007.
25. "Fitness Approximation in Evolutionary Computation", tutorial at *GECCO'2005* and presented with Yaochu Jin, 2005.
26. "Improving GA Search Reliability Using Maximal Hyper-Rectangle Analysis", in *the Genetic and Evolutionary Computation Conference (GECCO'2005)*, 2005.
27. "MDGA: Motif Discovery Using a Genetic Algorithm", in *the Genetic and Evolutionary Computation Conference (GECCO'2005)*, 2005.
28. "Hurst Exponent and Financial Market Predictability", in *the IASTED Conference on Financial Engineering and Applications (FEA 2004)*, 2004.
29. "Machine Learning Methods for Biomaterial Modeling", *in the 7th New Jersey Symposium for Biomaterials*, October 2004.
30. "Machine Learning Techniques for the Evaluation of External Skeletal Fixation Structures", *The International Conference on Mathematics and Engineering Techniques in Medicine and Biological Sciences (METMBS '04)*, June 2004.
31. "Constrained Multi-objective Optimization Using Steady State Genetic Algorithms", *The Genetic and Evolutionary Computation Conference (GECCO'2003)*.
32. "GADO: A Genetic Algorithm for Design Optimization", invited seminar, Georgia Institute of Technology, April 2003.
33. "Using Singular Value Decomposition to Improve a Genetic Algorithm's Performance", in *the Congress on Evolutionary Computation (CEC'2003)*, 2003.
34. "Comparison of Methods for Using Reduced Models to Speed Up Design Optimization", in *the Genetic and Evolutionary Computation Conference (GECCO'2002)*, 2002.
35. "GADO: A Genetic Algorithm for Design Optimization", invited seminar, University of Maryland, College Park, Maryland, 2001.
36. "Informed Operators: Speeding up genetic-algorithm-based design optimization using reduced models", *Genetic and Evolutionary Computation Conference* (GECCO'2000), 2000.
37. "An Incremental-Approximate-Clustering Approach for Developing Dynamic Reduced Models for Design Optimization", in the *Congress on Evolutionary Computation* (CEC'2000), 2000.
38. "Effect of Global Parallelism on a Steady State Genetic Algorithm", in the *Evolutionary Computing and Parallel Processing workshop at the Genetic and Evolutionary Computation Conference* (GECCO'99), 1999.
39. "GADO: A genetic Algorithm for Design Optimization", NASA Ames Research Center, 1998.
40. "An Adaptive Penalty Approach for Constrained Genetic Algorithm Optimization", *in the Third Annual Conference on Genetic Programming* (GP-98)/*Symposium on Genetic Algorithms* (SGA-98), 1998.

41. "Using Case Based Learning to Improve Genetic Algorithm Based Design Optimization", *in the Seventh International Conference on Genetic Algorithms* (IGGA'97), 1997.
42. "Adaptation of Genetic Algorithms for Engineering Design Optimization", in *The Artificial Intelligence in Design* (AID'96) Workshop on Evolutionary Systems in Design, 1996.

MAJOR PROFESSOR OF: [51 in total]

Ph.D. Dissertation Advisor for:
1. Afsaneh Shams, Ph.D. in Computer Science, in progress
2. Enas Alkhoshi, , Ph.D. in Computer Science, " TOWARDS ROBUST SENSOR-BASED HUMAN ACTIVITY RECOGNITION IN REAL-WORLD ENVIRONMENTS", Fall 2023.
3. Jonathan Vance, Ph.D. in Computer Science, "FORECASTING BIOMASS YIELDS WITH MACHINE LEARNING AND DOMAIN ADAPTATION", Summer 2023
4. Hamed Yaghoobian, Ph.D. in Computer Science, "Structure- and Context-aware NLP Approaches to Emotion and Subjectivity", Summer 2021.
5. Amna Basharat, Ph.D. in Computer Science, "Semantics Driven Human-Machine Computation Framework for Linked Islamic Knowledge Engineering", Fall 2016.
6. ManChon U, Ph.D. in Computer Science, "Improving Learning Outcomes by Using Clustering Validity Analysis to Reduce Label Uncertainty", Summer 2013.
7. Tomasz Oliwa, Ph.D. in Computer Science, "Learning, Exploiting and Benchmarking Problem Structures in Real-Valued Evolutionary Optimization", Spring 2013.
8. Boseon Beyon, PhD. in Computer Science, "Enhancing the Quality of High Dimensional Noisy Data for Classification and Regression Problems", Spring 2009.
9. Liang Shi, Ph.D. in Computer Science, "Adaptive Surrogate-Assisted Evolution", Fall 2008.
10. Bo Qian, Ph.D. in Computer Science, "Intelligent Financial market Prediction", Summer 2006.

M.S. Thesis Advisor for:
11. Jason Lian, M.S. in Artificial Intelligence, in progress
12. Daniel Harper, M.S. in Artificial Intelligence, in progress
13. Arthur LeBlanc, M.A.M.S, in progress
14. Bryan Smith, M.S. in Artificial Intelligence, in progress
15. Bradley Howard, M.S. in Artificial Intelligence, in progress
16. Lakshmita Kutari, M.S. in Computer Science (Non-Thesis), Spring 2023
17. Mounika Ganjikunta, M.S. in Computer Science (Non-Thesis), Spring 2023
18. Vikas Kunchala, M.S. in Artificial Intelligence, "Predicting Undergraduate Student Dropout Using Artificial Intelligence, Big Data and Machine Learning", Summer 2021.
19. Christopher Whitmire, M.S. in Artificial Intelligence, "Machine learning and feature selection for biomass yield prediction using weather and planting data", Summer 2019.
20. Chandler Kincaid, M.S. in Artificial Intelligence, "Genetic sequence classification and phylogenetic construction with N-gram methods", Fall 2018.
21. Liang Wang, M.S. in Computer Science, "Stock Ranking with Market Microstructure, News and Technical Indicators", Spring 2018.
22. Brent Lippert, M.S. in Artificial Intelligence, "Prediction of cancer-related mutation impact on protein activity using machine learning", Spring 2018.
23. Qiang Hao, M.S. in Computer Science, "Feature Selection and Classification of Post-Graduation Income of College Students in the United States", Spring 2017.

24. Brittany Norman, M.S. in Artificial Intelligence, "Computational Methods for Categorizing Unstructured Data Related to Pediatric Appendicitis within Electronic Medical Records", Spring 2017.
25. Shubham Jindal, M.S. in Artificial Intelligence, "Short Text Classification of Clinical Questions", Summer 2016.
26. Anzah Niazi, M.S. in Artificial Intelligence, "A Study in Human Activity Recognition: Hierarchical Classification and Statistical Analysis", Co-advisor, Summer 2016.
27. Guangjie Shi, M.S. in Computer Science, "Application of machine learning in malware file classification", Summer 2016.
28. Pan Huang, M.S. in Computer Science, "Multilingual Text Similarity Analysis in Islamic Texts", Spring 2016.
29. Aardra Ambili, M.S. in Artificial Intelligence, "Automated Scoring of Integrative Complexity using Machine Learning and Natural Language Processing", Fall 2014.
30. Akul Dewan, M.S. in Artificial Intelligence, "Predicting Protein stability Change Upon Single Point Mutation Using Multi-Instance Regression: A Local Conformational Analysis Approach", Fall 2014.
31. Haosha Wang, M.S. in Artificial Intelligence, "Machine Fashion: An Artificial Intelligence Based Clothing Fashion Stylist", Summer 2014.
32. William Richardson, M.S. in Artificial Intelligence, "Evolutionary Instance Re-sampling for Difficult Data Sets", Fall 2013.
33. Chul Woo Lim, M.S. in Computer Science, "Using Massively Parallel evolutionary Computation on GPUs for Biological Circuit Reconstruction", Fall 2013.
34. Shu Zhang, M.S. in Artificial Intelligence, "Evolutionary Accompaniment Systems for Creative Music Generation", Summer 2013.
35. Ganesh Bonde, M.S. in Artificial Intelligence, "Extracting the Best Features From Multi-company Stock Data to Improve Stock Price Prediction", Summer 2012.
36. Meng Meng, M.S. in Computer Science, "Automated MRI Prediction of Alzheimer's Disease Development by Machine Learning Methods", Fall 2011.
37. Rahila Umer, M.S. in Computer Science, "Machine Learning Approaches for the Computer Aided Diagnosis and Prediction of Alzheimer'S Disease Based on Clinical Data", Summer 2011.
38. Vasim Mahamuda, M.S. in Computer Science, "Analyzing the Performance of Machine Learning Algorithms on Metagenomic data", Summer 2010.
39. Cesar Koirala, M.S. in Artificial Intelligence, "Comparison of the Effects of Lexical and Ontological Information on Text Categorization", Summer 2008.
40. Arlo Morrison Lyle, M.S. in Artificial Intelligence, "Baseball Prediction Using Ensemble Learning", (Spring 2007).
41. Glenn Franklin Matthews, M.S. in Computer Science, "Using Temporal Difference Learning to Train Players of Nondeterministic Board Games", (Fall 2006).
42. Reyman Rabbani, M.S. in Computer Science, "Predicting Microbial Activity during Composting using Machine Learning Techniques", (Summer 2006).
43. Eric Stiles, M.S. in Computer Science, "Bone Desktop: A Visualization Tool for the Evaluation of External Skeletal Fixation Proposals", (Spring 2005).
44. Congshan Zhang, M.S. in Computer Science, "Improving GA Performance by Using Maximal Hyber-Rectangle Analysis and Relative Fitness", (Spring 2005).
45. Jaymin Kessler, M.S. in Artificial Intelligence, "Using Genetic Algorithms to Recognize Superpeer Structure in Peer to Peer Networks", (Co-advisor, Fall 2004).
46. Deepti Chafekar, M.S. in Computer Science, "Constrained Multi-Objective Optimization Using Steady State Genetic Algorithms", (Fall 2004).

47. Diptee Mehta, M.S. in Computer Science, "Machine Learning Approaches for Biomaterial Modeling", (Summer 2004).
48. Ning Suo, M.S. in Artificial Intelligence, "Machine Learning Techniques for the Evaluation of External Skeletal Fixations Structures", (Summer 2003).
49. Dmitri Kolychev, M.S. in Computer Science, "Microsatellite Detection and Consensus Sequence Verification by Virtual PCR and Machine Learning", (Summer 2003).
50. Xiao Ni, M.S. in Artificial Intelligence, "Comparisons of Methods for Developing and Using Dynamic Reduced Models for Design Optimization", (Summer 2002).
51. Anil Bahuman, M.S. in Artificial Intelligence, "An Evolutionary Approach to Standard Cell Design Automation", (Co-advisor, Fall 2001).

Member of Advisory Committees: [164 in total]

PhD in CS: 6 ongoing, 39 graduated
Abdulkarim Kushk (Summer 2023), Keyang He (Spring 2023), Seyedsaed Rezayidemne (Spring 2023), Farid Ghareh Mohammadi (Summer 2022), Sahar Voghoei (Summer 2021), Mohammadhossein Toutiaee (summer 2021), David Robinson (ongoing), Wei Zhang (Summer 2019), Di Chang (ongoing), Omar Alobaid (Fall 2020), Soheyla Amirian (Summer 2021), Zahra (Parya) Jandaghi (Fall 2022), Mehdi Assefi (Fall 2021), Saeid Safaei (ongoing), Seyed Navid Hashemi (ongoing), Aryabrata Basu (Fall 2018), Roi Ceren (Fall 2018), Chen Chen (Fall 2020), Qinglin Dong (Summer 2019), Saurabh Arora (ongoing), Sal Lamarca (ongoing), Hao Peng (Summer 2019), Arun Kumar (Fall 2018), Sominath Das (Summer 2018), Karan Sharma (Summer 2018), Delaram Yazdansepas (Fall 2017), Muthukomaran Chandrasekaran (Fall 2017), Mustafa Nural (Fall 2017), Mohammad Mohebbi (Fall 2017), Sherrene Bogle (Fall 2015), Khaleefah Aljadaa (Fall 2014), Ekhlas Sonu (Summer 2015), Anirban Mukhopadhyay (Summer 2014), David Luper (Fall 2012), Zhibin Huang (Spring 2011), Haibo Zhao (Summer 2009), Rabia Jafri (Summer 2008), Zhiming Wang (Summer 2008), Dongsheng Che (Summer 2008), Maciej Janik (Summer 2008), Siddhartha Chattopadhyay (Fall 2007), Zhenyu Zhong (Summer 2007), Ananda Chowdhury (Summer 2007), Xingzhi Luo (Summer 2006), Junfeng Qu (Spring 2006), Jacob Martin (Fall 2005), Hongxia Zhao (Rutgers University,Summer 2004).

MS in CS: 5 ongoing, 46 graduated
Pawan Yadav (ongoing), Madhura Gadgil (ongoing), Sreekanth Pinjala (ongoing), Sandipani Basu (Summer 2023), Saketh Jammula (Summer 2023), Saar Hersonsky (Summer 2019), Roxana Attar (Spring 2019), Zheliang Liu (Fall 2018), Sindhuri Chandrupatla (Summer 2018), Faranak Jalalzadehfard (Spring 2018), Bo Li (ongoing), Lu Jiang (ongoing), Anuja Nagare (Summer 2018), Nitin Saroha (Spring 2018), Priyanka Luthra (Fall 2017), Talal Alothman (Fall 2017), Sara Vahid (Spring 2017), Collin Watts (Summer 2016), Zhe Jin (Summer 2016), Indrajit Das (Summer 2016), Zhaochong Liu (Summer 2016), Sidi Liu (Fall 2015), Sayali Kale (Fall 2015), Ruichen Dai (Fall 2015), Nilayan Bhattacharya (Fall 2014), Chenxiao Fan (Spring 2014), Sagar Tarkhadkar (Fall 2013), Sayali Birari (Summer 2013), Raga Sowmya Tummalapenta (Fall 2012), Anousha Mesbah (Spring 2012), Asmita Rahman (Fall 2011), Carl Animesh Thakre (Summer 2011), Ankur Oberai (Summer 2011), Justin Martin (Summer 2011), Brett Meyer (Spring 2011), Qian Ma (Fall 2010), Qi Li (Fall 2010), Naveed Ahmed (Fall 2010), Sheng Yin (Fall 2009), Sharon Paradesi (Fall 2009), Kartheek Atluri (Fall 2009), Jaim Ahmed (Spring 2009), Durga Yeluri (Summer 2005), William Brown (Spring 2005), Yuchao Zhou (Spring 2005), Karthikeyan Giriloganathan (Spring 2004), Kaan Tariman (Spring 2004), Shrirang Yardi (Summer 2003), Mullai Shanmuhan (Spring 2003), Ruihua Liu (Spring 2001), Nilay Roy (Fall 2000).

MS in AI: 2 ongoing, 62 graduated
Siva Krishna Ravipati (spring 2023), Vishnupriya Buggineni, (Spring 2023), Amanda Issac (Spring 2023), Margaret Schrayer (fall 2022), Aashish Yadavally (Summer 2020), Sabri Sabri (Summer 2021), Brij Rokad (Fall 2020), Sumer Singh(Summer 2020), John Gibbs (Spring 2019), Lillian Li (Fall 2021), Hemanth Dandu (Fall 2020), Zachary Jones (Spring 2019), Joshua Shannon (Fall 2019), Yuanming Shi (ongoing), Rajaswari Sivakumar (Fall 2019), Christopher Barrick (ongoing), Maulik Shah (Spring 2019), Justin Payan (Fall 2018),Yan Du (Summer 2018), Sam Sanders (Fall 2017), Ankita Joshi (Fall 2017), Maulesh Trivedi (Summer 2016), Cameron Hamilton (Spring 2016), Thomas Drapela (Spring 2015), MD Shahnawaz Khan (Spring 2015), Seth Meyerson (Spring 2015), Kedar Marathe (Fall 2014), Matthew Losanno (Summer 2013), Weixin Ling (Fall 2012), Allen Taylor (Summer 2012), Yan Qu (Summer 2011), Nithya Vembu (Spring 2011), Philip Brooks (Fall 2010), Ananta Palani (Spring 2010), Muthukomaran Chandrasekaran (Spring 2010), Eric Drucker (Fall 2009), Karan Sharma (Fall 2008), Xia Qu (Fall 2008), Jeremy Tarver (Summer 2008), Christpher Taylor (Fall 2007), Dennis Perez (Fall 2007), Joe McFall (Summer 2007), Sergey Fogelson (Summer 2007), Kumar Ujjwal (Spring 2007), Rucen Deng (Summer 2006), Julian Bishop (Summer 2006), Steven Cheng (Summer 2006), Srigopika Radhakrishnan (Spring 2006), Daniel Tuohy (Spring 2006), David Boucugnani (Summer 2005), Daniel DeJuan (Summer 2005), Shilpa Hardas (Summer 2005), David Barnhard (Summer 2005), Darren Casella (Spring 2005), Kartini Abd Ghani (Fall 2004), Jason Schlachter (Summer 2004), Xunyu Pan (Summer 2004), Yarong Tang (Fall 2003), Abhishek Jain (Fall 2003), Sanjay Chellapilla (Summer 2003), Ernest Foster (Fall 2002), Lei Wu (Fall 2002), Tong Wang (Spring 2002), Chun Liang (Summer 2001).

MS in Engineering: 1 graduated
Xuewei Qi (Summer 2013).

UNIVERSITY SERVICE:
Director, Institute for Artificial Intelligence (2016 – present).
Graduate Coordinator, Institute for Artificial Intelligence (2003 – 2016).
Chairman of the AI Admissions Committee (2003 – present).
Member of the AI Curriculum Committee (2003 – present).
Member of the Faculty of Engineering (2001 – 2012).
Member of the Institute of Bioinformatics (2008 – 2016).
Cognitive Science, Undergraduate Degree Program Review Committee (2009 - present).
UGA Graduate Faculty, member since 2003.
Member of the Artificial Intelligence Faculty (Fall 2000 – present).
Reviewer, Institute for Integrative Precision Agriculture seed grant proposals (2023)

DEPARTMENTAL SERVICE:
Chair of the CS Undergraduate Programs and Curriculum Committee (2015 – 2020).
Member of the Undergraduate Programs and CS Curriculum Committee (2002 – 2023).
Member of the Graduate Programs and CS Curriculum Committee (2023 – present).
Member of the CS Publications and Web Committee (2015 – present).
Member of the CS Teaching Assignments Committee (2012 – present).
Tea coordinator (2011 – present).
Member of the CS Research Events Committee (2009 – present).
Member of the CS Tenured Faculty Committee (2006 – present).
Director of the Evolutionary Computation and Machine Learning (ECML) lab (2000 – present).
Member of the CS Graduate Programs Committee (2012 – 2015).

Member of the CS Strategic Planning Committee (2011 – 2013).
Member of the CS Equipment Committee (2010 – 2013).
Chair of the CS Research Events Committee (2011 – 2012).
Member of the CS Head's Advisory Committee, (2009-2010).
Member of the CS graduate student recruiting committee (2000, 2001).

Kimberly Van Orman

Institute for Artificial Intelligence   195 Pine Valley Dr.
515 Boyd Research and Education Center   Athens, GA 30606
University of Georgia, Athens, GA 30602-7415   (518) 573-5829
kvanorman@uga.edu

EDUCATION

May
2014
Ph.D., Philosophy, University at Albany, State University of New York
Dissertation: *Toward Explaining the Gap: How a Particular View of Explanation Underwrites the Explanatory Gap*

1994
M.A., Philosophy, Kent State University
Thesis: *A Pragmatic and Comparative Perspective on the Experience of Faith: A Study of William James and Wilfred Cantwell Smith.*

1992
B.A., Psychology, *Cum Laude,* Kent State University

AREAS OF SPECIALIZATION   Philosophy of Mind, Philosophy of Science, Artificial Intelligence, Ethics of AI, Teaching of Philosophy

AREAS OF COMPETENCE   Philosophy of Cognitive Science, Epistemology, Logic, Ethics

ACADEMIC APPOINTMENTS:

2020—   Lecturer, and member of Graduate Faculty, Institute for Artificial Intelligence, University of Georgia, Athens, GA

2011-
2020   Instructional Consultant, Institute for Teaching, Learning and Academic Leadership, University at Albany, Albany, NY

2016-
2017   Visiting Faculty, Society Culture and Thought, Bennington College, Bennington, VT

PUBLICATIONS

Van Orman, Kimberly. "Spotlight: Mind-Body Identity: Are We Just Our Brains?" In *Routledge Handbook of Neuroethics,* edited by L. Syd M Johnson and Karen S. Rommelfanger, London: Routledge, 2018.

Van Orman, Kimberly. "Teaching Philosophy with Team Based Learning." *American Association of Philosophy Teachers Studies in Pedagogy*, 1 (2015): 61-81. doi: 10.5840/aaptstudies20159215

MEDIA COVERAGE

Oct. 2023   Bhuiyan, Johana. "'Is this an Appropriate Use of AI or Not?': Teachers Say Classrooms Are Now AI Testing Labs." *The Guardian*, October 31, 2023. https://www.theguardian.com/technology/2023/oct/31/educators-teachers-ai-learning-classrooms-misuse

June 2018   Supiano, Beckie. "How One Teaching Expert Activates Students' Curiosity." *The Chronicle of Higher Education, Teaching (blog)*, June 7, 2018, https://www.chronicle.com/article/How-One-Teaching-Expert/243609.

TEACHING EXPERIENCE

2020-   Lecturer, Institute for Artificial Intelligence, University of Georgia, Athens, GA
AI for Humans
Artificial Intelligence
Deductive Systems
Data Mining
Ethics and AI
Faculty Research Seminar
GradFIRST
Introduction to Cognitive Science
Philosophical Psychology
Philosophy of Mind

2016-2017   Visiting Faculty, Society Culture and Thought, Bennington College, Bennington, VT
Philosophy of Science
Minds and Machines
Theories of Knowledge
Philosophy of Mind

Fa 2001-Sp 2007   Instructor, Department of Cognitive Science, Rensselaer Polytechnic Institute
Minds and Machines, 11 sections
Introduction to Philosophy, 6 sections
Revolutions in Thought

Su 1999-Sp 2007   Instructor, Department of Philosophy, University at Albany, State University of New York
Introduction to Ethical Theory, 2 sections
Critical Thinking, 2 sections
Morals and Society
Moral Choices, 3 sections, including course at Albany Medical College

Fa 1999-Sp 2002   Instructor, Department of Philosophy, Siena College
Philosophy and the Human Being, 5 sections
Basic Logic

Fa 2000   Instructor, Department of Philosophy, The College of Saint Rose
Invitation to Philosophy

Fa 1997-Fa 2000   Teaching Assistant, Department of Philosophy, University at Albany, State University of New York

Additional Teaching Experience

Summers   Instructor, Center for Talented Youth (Summer Program), Johns Hopkins University
2003-6,   This program provides advanced topic courses to gifted middle- and high-school
2009-10   students. I also supervised a teaching assistant and served as mentor for other
                     instructors of Philosophy of Mind, 2004-2010.
                         Philosophy of Mind, 11 sections

OTHER PROFESSIONAL EXPERIENCE

2007-   Future Faculty Fellow, Institute for Teaching, Learning and Academic Leadership,
2011   University at Albany
                 Provided support to graduate students in instructional roles and provided professional
                     development for graduate students in academic career tracks. Developed
                     certificate program documenting graduate student preparation for teaching
                     including three credit-bearing courses on teaching and professional development.

2007-   Academic Dean, Center for Talented Youth (Summer Program), Johns Hopkins
2008   University
Summers Supervised the instructional program for gifted middle- and high-school students.
                 Also assisted in the running of the site program which provided education, room
                 and board to between 240-500 students for six weeks.

1992-   Academic Advisor (Graduate Assistant), College of Arts and Sciences, Kent State
1995   University

CONFERENCE PAPERS AND PRESENTATIONS: PHILOSOPHY, HUMANITIES, and COMPUTER SCIENCE

Peer Reviewed

July   "Creative Thinking for Responsible AI" American Association of Philosophy Teachers,
2024   International Workshop Conference on Teaching Philosophy, Westerville, OH.

June   "From Passive to Active: Teaching Students to Critically Engage Artificial Intelligence"
2023   Association for Computers and the Humanities virtual conference. Presented with
                 Erica O'Neil, Lincoln Center for Applied Ethics, Arizona State University; Hina
                 Shaikh, Center for Gender Studies, and Elizabeth Holden, Data Justice Lab,
                 University of Florida.

July   "Small-group Activities as a Means of Creating Community" American Association of
2022   Philosophy Teachers, International Workshop Conference on Teaching Philosophy,
                 Westerville, OH.

July   "Build Tenacity in Your Students: Help Students Learn to Work Harder when
2021   Challenged (Rather than Give Up)" American Association of Philosophy Teachers,
                 International Workshop Conference on Teaching Philosophy, *held online.*

July   "Teaching for a Growth Mindset as a Path to Retaining more Women and Minorities in
2016   Philosophy," American Association of Philosophy Teachers, International Workshop
                 Conference on Teaching Philosophy, Saginaw, MI

Aug.   "Engaging Philosophy Students using Team-Based Learning," American Association of
2014   Philosophy Teachers, Twentieth International Workshop Conference on Teaching
                 Philosophy, Collegeville, MN.

Dec. 2013	"Using Team Based Learning to Teach Philosophy," American Association of Philosophy Teachers Session, Eastern Division APA meeting, Baltimore, MD.
April 2008	"The Problem of Explanation: A Call to Reject the Hidden Reduction in Non-Reductive Materialist Arguments for the Explanatory Gap," Toward a Science of Consciousness, Tucson, AZ (poster).
April 2006	"Beyond Critical Thinking: On the Nature and Assessment of Critical Wisdom," co-written with Fahey, J., van Heuveln, B., and Voegtle, H., American Education Research Association Meeting. San Francisco.
Spring 1999	"Cognitive Heuristics and Scientific Thought," Capital Area Philosophical Society Conference, Rensselaer Polytechnic Institute, Troy, NY.

Invited

May 2024	"Can we Teach Ethically with AI?" Presenter, Governor's Teaching Fellows Workshop, Athens, GA.
Oct. 2023	"What is AI and How on Earth do We Teach with it?" Keynote, University of Southern Mississippi Educators' Retreat, Hattiesburg, MS.
Oct. 2023	"Navigating the Digital Future: Faculty Exploring AI's Role in Education." Panel. Part of the University System of Georgia's "Teachign and Learning Centers Program Spotlight: AI Webinar Series"
Sept. 2023	AI Ethics talk, Athens Torch Club, Athens, GA
Sept. 2022	"Why Do Good People Create Bad Algorithms and How Do We Stop Them?" workshop for University at Albany Department of Philosophy, Albany, NY
July 2019	"Working with Diverse Student Perspectives: When Discussions Get Difficult," Hamilton College Summer Program in Philosophy Conference in Pedagogical Innovation, Clinton, NY.
March 2019	"Instilling a Growth Mindset in Students to Help with Tenacity and Retention," APA Committee for Teaching Zoom Workshop.
January 2017	"Team-Based Learning for Philosophy Courses," AAPT-APA Teaching Hub, Mini-conference on Teaching Philosophy, Eastern Division Meeting, American Philosophical Association, Baltimore, MD.
March 2015	"Using Team Based Learning to Teach Philosophy," Keynote, Rutgers Graduate Workshop on Teaching Philosophy, New Brunswick, NJ.
March 2000	"The Family, Feminism, and Justice," The Square Circle, University at Albany Ethics reading group, University at Albany, Albany, NY.

PRESENTATIONS: TEACHING & PROFESSIONAL DEVELOPMENT

Peer reviewed

June 2019   "Designing for Tenacity: Help Your Students Stick to It!" Lilly Conference on College and University Teaching and Learning, Bethesda, MD.

June 2019   "Communicating Your Research (for jobs and profit!)" Lilly Conference on College and University Teaching and Learning, Bethesda, MD.

Nov. 2018   "Leading During Difficult Discussions: Strategies for Faculty and Students," with Aviva Bower, Professional and Organizational Developers Network in Higher Education Conference, Portland, OR.

May 2018   "The Power of the "Naïve Task:" Get Them Working First!" Lilly Conference on College and University Teaching and Learning, Bethesda, MD.

Nov. 2017   "Teaching for Growth Mindset: Empower Underrepresented Students and Help Everyone!" Engaging Diversity, Equity and Inclusivity in the Classroom, Campus and Community: 2017 State University of New York Diversity Conference, Albany, NY.

June 2017   "Teaching for Growth Mindset: Empower Underrepresented Students and Help Everyone!" Lilly Conference on College and University Teaching and Learning, Bethesda, MD.

June 2017   "Setting the Tone: What Your Syllabus Says to Your Students," Roundtable session, Lilly Conference on College and University Teaching and Learning, Bethesda, MD.

March 2016   "Engage, Energize and Empower Your Students with Team-Based Learning," SIGCSE 2016 (Conference of the Association of Computing Machinery Special Interest Group on Computer Science Education), Memphis, TN.

May 2015   "Beyond Recall: Creating Multiple Choice Questions to Prompt Critical Thinking," Lilly Conference on College and University Teaching and Learning, Bethesda, MD.

Nov. 2014   "Leveraging the Power of Team-Based Learning to Prepare Future Faculty," with Billie Franchini, Professional and Organizational Developers Network in Higher Education Conference, Dallas, TX.

Nov. 2014   "Seeing Beyond the Gates: Leveraging Risk for Engaged Careers," with Tine Reimers, Professional and Organizational Developers Network in Higher Education Conference, Dallas, TX.

May 2014   "Are You Flipping Engaged? What to Do with All That Class Time." Lilly Conference on College and University Teaching and Learning, Bethesda, MD

Nov. 2013   "Making Decisions: Connecting, Risking and Learning through Supercharged Discussions," Professional and Organizational Developers Network in Higher Education Conference, Pittsburgh, PA.

Invited

February 2020   "Working with Diverse Student Perspectives: When Discussions Get Difficult," pedagogy workshop for faculty, Skidmore College, Saratoga Springs, NY.

January 2020   "Start Your Semester off Right by Getting Your Students off their Devices and into the Thinking of your Discipline!" (half-day workshop), "Designing for Tenacity: Help Your Students Stick to It!" Keynote presentation and workshop for Faculty Development Day, King's College, Wilkes-Barre, PA.

March 2019   "Teaching for a Growth Mindset: Strategies to Encourage Student Perseverance Toward Deep Learning," "Build Tenacity in Your Students," and "The Power of the 'Naïve Task': Put them to work before they know anything." Teaching Strategies workshops (put on by the Office of Academic Affairs and the Center for Student Success), Hartwick College, Oneonta, NY.

January 2018   "All In and On Topic: Creating Effective Discussions," and a half-day Team Based Learning workshop, Seventh Annual Regional Conference on Teaching, Learning, & Scholarship, Center for Teaching Excellence, Frostburg State University, Frostburg, MD.

October 2017   "Avoid Undermining the Learning in Your Classroom: Strategies to Encourage Student Perseverance toward Deep Learning." (Invited plenary), Lilly Conference on College and University Teaching and Learning, Traverse City, MI.

October 2016   "Dynamic Discussions with Lessons from Team-Based Learning," Teaching Arts Lunch, Smith College, Northampton, MA.

August 2016   Team Based Learning, two-day training workshop (with Billie Franchini). SUNY Adirondack, Queensbury, NY.

July 2016   Team Based Learning, two-day training workshop, Anderson University, Anderson, SC.

January 2016   Workshops: "Effective Engaged Learning," and "Getting the Learning into Engaged Learning," Sullivan County Community College, Loch Sheldrake, NY.

PROFESSIONAL SERVICE

2023—   At-large member of the Board of Directors, American Association of Philosophy Teachers

2023—   Chair, Teaching and Learning Committee, American Association of Philosophy Teachers

Fall 2023   Invited reviewer for book on Generative AI, Oxford University Press

2022—   Consulting Editor, *College Teaching*.

2022—   Ethics reviewer, The International Conference on Learning Representations (ICLR)

2017—   Reviewer, conference proposals, American Association of Philosophy Teachers

2017—   Conference Planning Committee, American Association of Philosophy Teachers

Nov. 2022   Speaker, "Virtual Field Trip" with the Forsyth County Humanities Academy, discussing the role of the humanities in influencing artificial intelligence.

2018—2021	Committee on the Teaching of Philosophy, American Philosophy Association
2015—2020	Reviewer, conference proposals, Lilly Conferences on Teaching and Learning
2018-2020	Reviewer, conference proposals, Professional and Organizational Developers Network in Higher Education
2019—2020	Reviewer, Teaching Hub proposals, American Philosophy Association Pacific Meeting
Jan. 2019	Chair, APA Teaching Hub session, "Evaluating Inclusion in Course Design and Syllabi," APA Eastern Division Meeting, New York, NY
2014-18	Diversity and Outreach Subcommittee of the Graduate and Professional Student and Postdoc Developers committee, Professional and Organizational Developers Network in Higher Education (Co-chair, 2016-2018)
2008-18	Graduate and Professional Student and Postdoc Developers Committee, Professional and Organizational Developers Network in Higher Education
2018	Reviewer, *American Journal of Bioethics—Neuroscience*
2017	Reviewer, *To Improve the Academy: A Journal of Educational Development.*
2008-2011	Curriculum development team, Center for Talented Youth, Johns Hopkins University. Worked with a team to create a curriculum guide for teaching an Introduction to Philosophy course at the high school level. This project was funded by the Squire Family Foundation for Advancing Ethics Education.

UNIVERSITY, AND DEPARTMENTAL SERVICE

Fall 2023	Member, Institute for Artificial Intelligence Planning Group for Moving the IAI, Reporting to the Provost's Office, UGA
Fall 2023	Chair, Programs subcommittee, Institute for Artificial Intelligence Planning Group for Moving the IAI Reporting to the Provost's Office, UGA
2023—	Remediation Faculty Representative, Academic Honesty Remediation Program Restorative Justice Conference, Office of Academic Honesty, UGA
2023—	Teaming for Interdisciplinary Research (TIR) Pre-Seed Program (Team member), "Artificial Intersections: An Arts and Humanities Podcast about Ethics and Technology," , Department of Theatre and Film Studies, PI.
2022—	Teaming for Interdisciplinary Research (TIR) Pre-Seed Program (Team member), "Creative Community Research Partnerships," Anna Abraham, Department of Educational Psychology and Director, Torrance Center for Creativity & Talent Development, PI.
2019-2020	Resource Analysis and Planning Subcommittee of the University Policy and Planning Council, University at Albany.
2011-16	Community & Public Service Program Advisory Committee, University at Albany
2015-16	Search committee, Department of Computer Science Lecturer search, University at

Albany

2015-16	Search committee, Institute for Teaching, Learning and Academic Leadership Instructional Consultant, University at Albany
2011-16	Council on Libraries, Information Systems, & Computing, University at Albany
2011-15	Public Engagement Committee and Subcommittee on Community Engaged Learning, University at Albany
2014-15	University at Albany Minorities and Philosophy Chapter
2014-15	Search Committee Chair, Department of Informatics Lecturer search, University at Albany

AWARDS & RECOGNITION

2021-2023	UGA Career Center Acknowledgement. Was nominated by students who identified me as "as a person who has significantly contributed to their career development and success" in the UGA Career Outcomes Survey. One student each year.
April 2022	Nominated to the National Humanities Center Course Design Project for "Responsible AI." ($35,000 total stipend—$15,000 for individual and $20,000 university)
2021-2022	Thank-a-Teacher recognition from the Center for Teaching & Learning, University of Georgia, each semester from Spring 2021 through Fall 2022. Five separate students submitted comments over these four semesters.
2021-2022	UGA Career Center Acknowledgement. Was nominated by two students (one in 2021, another in 2022) who identified me as "as a person who has significantly contributed to their career development and success" in the UGA Career Outcomes Survey
May 2010	Graduate Student Essay Prize, Department of Philosophy, University at Albany, SUNY Departmental prize for the paper, "The Laplacian Worldview and the Explanatory Gap"
Nov. 2010	Graduate Student Professional Development Committee Award, Professional and Organizational Developers Network in Higher Education
January 2008	K. Patricia Cross Future Leaders Award, Association of American Colleges and Universities

PROFESSIONAL DEVELOPMENT

July 2024	2-day wrap-up workshop as part of the Responsible AI course design project, National Humanities Center, Raleigh, NC
Fall 2022—	Faculty Learning Communities: Ungrading, UGA CTL
Fall 2020—	Faculty Learning Communities: Improvisation for Teachers and Learners, UGA CTL
Fall 2023	Faculty Learning Community: Innovating with AI: In and Beyond the Classroom
Fa 2022-Sp 2023	Teaching Academy Early Career Fellow, University of Georgia
Fall 2022	Workshop: Overcoming Student Resistance to Active Learning, UGA CTL Workshop: Ready to Thrive: The Experiential Learning Requirement at UGA
Summer 2022	5-day course design workshop as part of the Responsible AI course design project, National Humanities Center, Raleigh, NC
Spring 2022	Workshop: Mindfulness Strategies to Overcome Writer's Block, UGA CTL
Fall 2021	Reading group: *Relationship-Rich Education: How Human Connections Drive Success in College*, Participant, UGA CTL
Summer 2021	Teaching Seminar Facilitator Training (4 days), American Association of Philosophy Teachers
Spring 2021	Workshop: Combating the Effects of Zoom Fatigue, UGA CTL Reading Group: *Bandwidth Recovery: Helping Students Reclaim Cognitive Resources Lost to Poverty, Racism, and Social Marginalization*, Participant, UGA CTL
Fall 2020	New Faculty Orientation, UGA Reading Group: *Radical Hope: A Teaching Manifesto*, Participant Workshop: The Call is Coming from Inside the House: How Grades Can Undermine Learning and Jeopardize our Students' Wellbeing, UGA CTL
Summer 2020	Preparing to Pivot, UGA

PROFESSIONAL MEMBERSHIPS

American Association of Philosophy Teachers
American Philosophical Association