

Wednesday March 23 (Day 1)

070 GCI-1710 Room 3

9:00 - 9:10 a.m. Opening remarks - Dr. Cecilia O. Alm
Speaker introduction - Dr. Esa Rantanen

9:10 - 10:00 a.m. Keynote 1



Building Literacy in Artificial Intelligence and Machine Learning in Future Generations of Technology-Minded People

Dr. Daniel Hannon, Tufts University

10:00 - 10:15 a.m. Networking coffee break

10:15 - 12:00 p.m. Session I



Information Literacy and Strategies for Dealing with Exploding AI Research Literature - bring your laptop

Roman Koshykar, Computing and Information Sciences Librarian, RIT

12:00 - 1:00 p.m. Lunch break, with debriefing for Trainees

1:00 - 1:45 p.m. Session II



The Future of Eye-tracking in VR

Dr. Gabriel Diaz, Center for Imaging Science, RIT

2022 AWARE-AI RETREAT

Register by email: awareainrt@rit.edu



RIT

AWARE-AI NSF Research Traineeship Program

2:00 - 3:00 p.m. Session III



Considerations for Careers in Academia

Lorraine Stinebiser, Director of Faculty Diversity and Recruitment, RIT

3:00 - 3:15 p.m. Networking coffee break

3:00 - 3:45 p.m. Session IV

Panel - Assistant Professors' Perspectives on Academic Careers



Dr. Rain
Bosworth



Dr. Kristen
Shinohara



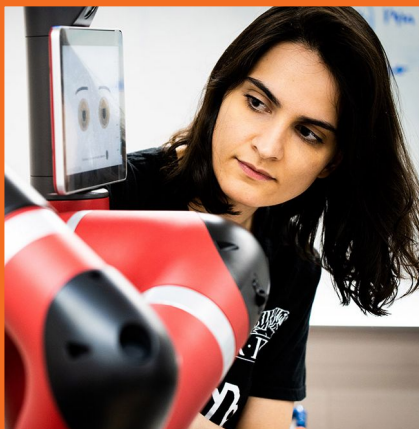
Dr. Alex
Ororbia



Dr. Garreth
Tigwell



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Thursday March 24 (Day 2)

GLE-3170

10:00 - 10:10 a.m. Announcements - Dr. Cecilia O. Alm
Speaker introduction - Dr. Ferat Sahin

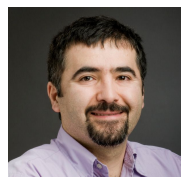
10:10 - 11:00 a.m. Keynote 2



Using Hierarchies of Skills to Assess and Achieve Automatic Multimodal Comprehension

Dr. Ajay Divakaran, Technical Director of the Vision and Learning Lab at the Center for Vision Technologies, SRI International, Princeton.

11:00 - 12:00 p.m. Session I



Lecture/Demo: Human-sensing Robots

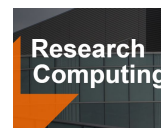
Dr. Ferat Sahin, Department of Electrical and Microelectronic Engineering, RIT

12:00 - 1:00 p.m. Lunch break, with debriefing for Trainees

GOL-2400

1:00 - 3:30 p.m.

Session II



RIT Research Computing (RC) Technical Tutorial - bring your laptop

15 minute break around 2:30 p.m.

3:30 p.m.

Concluding remarks - Dr. Reynold Bailey

3:30 - 4:00 p.m.

Coffee mingle and networking

Keynote 1: Dr. Daniel Hannon: *Building Literacy in Artificial Intelligence and Machine Learning in Future Generations of Technology-Minded People*

Abstract: As the pace of innovation continues to amaze us with ever smarter technologies, consumers continue to fall behind in our understanding of how these products and systems work. A recent poll of an engineering class revealed limited understanding of the ways in which their personal behaviors were being tracked through their smartphones, with the data being streamed continuously for the purpose of more closely adjusting their online experiences to their personal habits. Our experiences of the use of AI-empowered technology that seem to adapt to our needs lull us into complacency, unaware of the ever changing machine learning models that are behind it all. In this presentation, I will provide an overview of the state of affairs regarding AI and the use of ML in consumer products in general, and in medical technology in particular, and highlight some of the ways in which as consumers and users of these technologies we are being unwittingly affected and influenced by them. Next, I will present a conceptual model that outlines where the current state of technically-oriented education remains out of step with these advances in technology, and point to ways in which this gulf can be reduced. I offer ideas about how to provide a foundational understanding in AI, with specific focus on ML for generalists working in the technology sector, to increase the opportunity for more people to become aware of current uses and abuses of AI and the ways in which they as future technologists can contribute more actively in the development of future innovations in which AI and ML will be included.

Keynote 2: Dr. Ajay Divakaran: *Using Hierarchies of Skills to Assess and Achieve Automatic Multimodal Comprehension*

Abstract: We lay out a human learning-based framework for studying computational multimodal comprehension. Current visual question answering (VQA) systems treat all questions as equal and have no notion of comprehension. Elementary school (K-5) teaching of reading comprehension on the other hand has a graded approach based on a hierarchy of skills that covers the range from memorization to content creation. In our research we take inspiration from such hierarchies to investigate both dataset creation and question answering techniques. First, we are currently creating a new visual question answering dataset that tests comprehension of VQA systems in a graded manner using hierarchical question answering with picture stories. Second, we investigate large language models such as GPT-Neo, the open version of GPT-3. Current pre-trained language models have lots of knowledge, but a more limited ability to use that knowledge. Bloom's Taxonomy helps educators teach children how to use knowledge by categorizing comprehension skills, so we use it to analyze and improve the comprehension skills of large pre-trained language models. Our experiments focus on zero-shot question answering, using the taxonomy to provide proximal context that helps the model answer questions by being relevant to those questions. We show that targeting context in this manner improves performance across 4 popular common sense question answer datasets. Finally, we present work on detection and removal of bias in common multimodal machine comprehension datasets. We hypothesize that this naturally occurring bias present in the dataset affects even the best performing model. We verify our proposed hypothesis and propose an algorithm capable of modifying the given dataset to remove the bias elements.