RIT

Center for Human-aware Artificial Intelligence

CHAI Seminar Series

Refreshments will be served.

CHAI

DATE: **Monday, March 4, 2024**

SPEAKER: **Mahsa Mozaffari**
Advanced Ph.D. Student, Electrical and Computer Engineering, RIT

TITLE: **Improving Reliability of Visual Question Answering Models**

IN PERSON: **Golisano Hall (070), Room CYB-1710/1720**

ABSTRACT: The evolution of deep learning has enabled the development of sophisticated models capable of tackling the intricate challenges of visual question answering (VQA), a task that necessitates understanding, integrating, and reasoning from both visual and linguistic inputs to provide accurate answers. While accuracy is vital, the ability to evaluate the trustworthiness of these answers is crucial, especially in critical domains such as healthcare, where incorrect answers may lead to severe consequences. This highlights the importance of developing VQA systems that are not only capable of producing correct answers but can also reliably indicate their level of certainty. Current efforts in the VQA domain predominantly focus on improving model accuracy, with little attention given to the critical aspect of reliability. Our research focuses on the reliability of VQA systems, aiming to provide accurate confidence scores for their answers. Such a measure enables better-informed decisions, allowing for the possibility of deferring to human experts or implementing additional mechanisms for answer verification. This work represents a novel, significant step towards developing VQA models that are both highly accurate and well-calibrated, thereby addressing a crucial gap in current research efforts.

BIO: **Mahsa Mozaffari** is a Ph.D. student in Electrical and Computer Engineering at RIT, working under the supervision of Dr. Qi Yu in the Machine Learning and Data Intensive Computing (MINING) Lab. Her current research focuses on enhancing reliability and trustworthiness in deep learning. She is particularly interested in addressing the challenges of miscalibration in machine learning models, especially within the context of Visual Question Answering (VQA) systems. Mahsa is dedicated to advancing the field through innovative approaches and has contributed with research on the intersection of multimodal learning and reliable machine learning, aiming to develop methodologies that ensure the accuracy and trustworthiness of AI systems. In addition to her primary research interests, Mahsa is investigating the integration of low-rank methods in neural networks to improve the efficiency and performance of deep learning models. Her dedication to her field is demonstrated by her active involvement in academic conferences and her contributions to peer-reviewed journals. She earned her bachelor's degree in Software Engineering from Sharif University of Technology and her Master's degree from the University of South Florida.

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