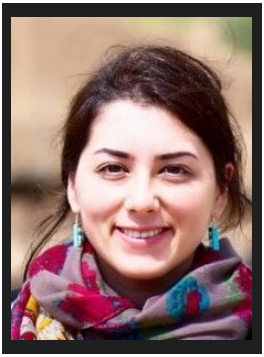
Carnegie Mellon University
Language Technologies Institute



Malihe Alikhani
University of Pittsburgh

Malihe Alikhani is an assistant professor of computer science in the School of Computing and Information at the University of Pittsburgh. She got her Ph.D. in computer science and a graduate certificate in cognitive science from Rutgers University. She was the recipient of the fellowship award for excellence in computation and data sciences from the Rutgers Discovery Informatics Institute in 2018. Before joining Rutgers, she was a lecturer and an adjunct professor of mathematics and statistics for a year at San Diego State University. She has served as a member of the program committee and the area chair of ACL conferences and is currently the associate editor of the Mental Note Journal.

Learning to Connect Images and Text for Natural Communication

From the gestures that accompany speech to images in social media posts, humans effortlessly combine words with visual presentations. However, machines are not equipped to understand and generate such presentations due to people's pervasive reliance on common-sense and world knowledge in relating words and images. I present a novel framework for modeling and learning a deeper combined understanding of text and images by classifying inferential relations to predict temporal, causal, and logical entailments in context. This enables systems to make inferences with high accuracy while revealing author expectations and social-context preferences. I proceed to design methods for generating text based on visual input that use these inferences to provide users with key requested information. The results show a dramatic improvement in the consistency and quality of the generated text by decreasing spurious information by half. Finally, I sketch my other projects on human-robot collaboration and conversational systems and describe my research vision: to build human-level communicative systems and grounded artificial intelligence by leveraging the cognitive science of language use.

Friday, November 20, 2020
1:30 - 2:50 PM EST
Join the meeting on Zoom
Meeting ID 968 6753 2227 Passcode 883155

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