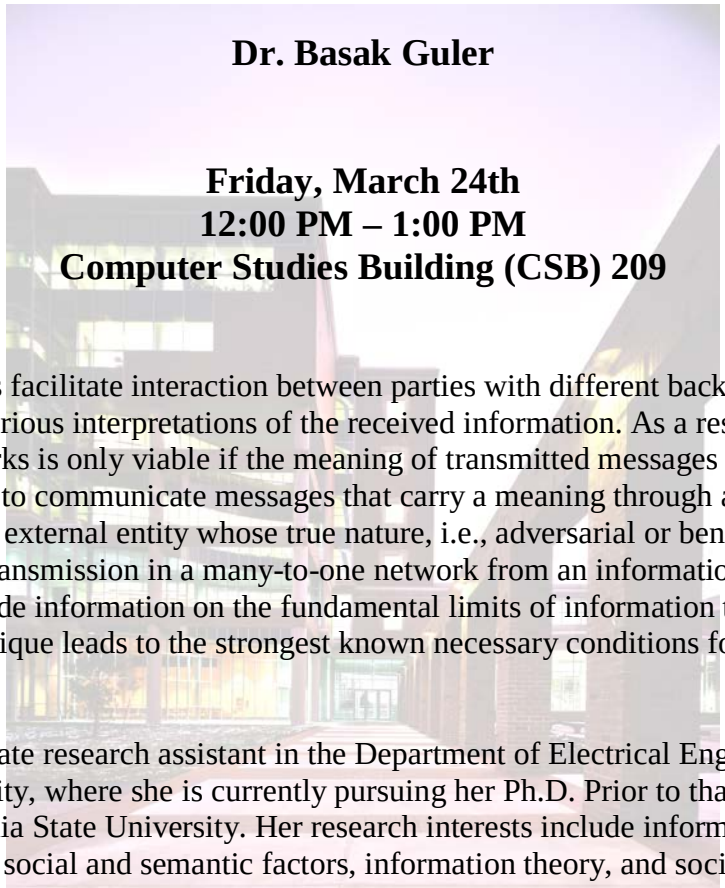
University of Rochester
Department of Electrical and Computer Engineering Colloquia

Information transmission in networks with social and semantic constraints



Dr. Basak Guler

Friday, March 24th
12:00 PM – 1:00 PM
Computer Studies Building (CSB) 209

Abstract: Modern networks facilitate interaction between parties with different backgrounds, interests, and biases, which can lead to various interpretations of the received information. As a result, reliable information transmission in such networks is only viable if the meaning of transmitted messages is preserved at reception. In this talk, I will discuss how to communicate messages that carry a meaning through a noisy channel, when the receiver is influenced by an external entity whose true nature, i.e., adversarial or benign, is unknown. Next, I will focus on information transmission in a many-to-one network from an information-theoretic perspective, and discuss the impact of side information on the fundamental limits of information transmission. Under certain settings, the proposed technique leads to the strongest known necessary conditions for information transmission with a fidelity criterion.

Bio: Basak Guler is a graduate research assistant in the Department of Electrical Engineering at the Pennsylvania State University, where she is currently pursuing her Ph.D. Prior to that, she received her M.Sc. degree from the Pennsylvania State University. Her research interests include information transmission in networks that are subject to social and semantic factors, information theory, and social networks. She is a recipient of the Dr. Nirmal K. Bose Dissertation Award by the Pennsylvania State University and the Young Scholar Award by the Turkish-American Scientists and Scholars Association. She was named a Rising Star in EECS by MIT in 2015.

Pizza and soda provided.