



Northeastern University

Electrical and Computer Engineering

ECE FACULTY CANDIDATE



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**Sensing the Physical World using
Pervasive Wireless Infrastructure**

Wednesday, January 13
11:00 AM – 12:00 PM

Zoom Link:

<https://northeastern.zoom.us/j/98049088140>

Abstract: The promise of IoT and emerging applications such as smart cities, autonomous vehicles, and mixed reality that are tightly coupled with the physical environment pushes the demand for high-fidelity sensing. Meanwhile, we are also seeing advances in wireless technologies such as Millimeter-wave and Massive MIMO systems that can transform the role of wireless networks from a pure communication medium to a pervasive sensing infrastructure. Elahe's research investigates the synergy of wireless and sensing by applying signal processing and machine learning techniques to low-level RF signals. This talk will focus on how to map the natural interactions of wireless signals with the environment into physical and behavioral measurements for human sensing, device localization and object tracking. She will then discuss her ongoing research on designing an RF-equivalent of optical retro-reflectors for automotive applications and will conclude with her roadmap toward omni-present sensing for the wireless embedded systems of the future.

Speaker bio: Elahe Soltanaghaei is a postdoctoral researcher at Carnegie Mellon University in the Wireless, Sensing, and Embedded Systems (WiSE) lab. She received her PhD in Computer Science from University of Virginia. Her research spans the areas of wireless sensing and networking with applications in IoT and Cyber-Physical Systems. Reflecting the multidisciplinary nature of her research, her work has been published in premier conferences and journals in the areas of mobile computing, wireless networks, and energy and infrastructure. She is the recipient of 2020 ACM SIGMOBILE Dissertation Award, 2019 EECS Rising Stars, and 2019 N2-Women Young Researcher Fellowship.

Additional information at: <http://www.andrew.cmu.edu/user/esoltana/>