



Department of Computer Science

Spring 2020 - Seminar Series

“Combining IoT and ML for Situation Classification”

Wednesday - April 1, 2020

HEC - 450

9:00 a.m. - 10:30 a.m.

Abstract: The internet of things (IoT) has been expanding in domains through an increased number of IoT devices and the vast deployment of sensors. Simultaneously, there have been significant advancements in artificial intelligence (AI), in particular machine learning (ML), due to the increased availability of data and computation capabilities. We consider that IoT enhanced with AI would improve our lives in the future. This talk focuses on combining IoT and ML for what we call *situation classification*. Situation classification targets generating insights through an accurate understanding of the context in the given environment. Thus, it is a specific problem of *context awareness*, which has been enabling various new applications and interactions between humans, objects, and computers.

The particular theme of this talk is the situation classification for future smart cities and smart mobility applications, where we generate insights for relevant events happening in urban areas. For instance, we may detect situations such as accidents, emergencies, and traffic congestion in smart cities in real-time to improve the responsiveness of the city to such incidents. Moreover, IoT data captured from various sensors may enable us for more efficient crowd management and enhanced public safety. Lastly, autonomous systems such as autonomous driving vehicles, robots, and unmanned aerial vehicles would certainly benefit from situation classification by accurately understanding their environment and making decisions and planning based on their enhanced perspectives of the environments.



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Bio: Dr. Gürkan Solmaz is a Senior Researcher in the IoT Research group at NEC Laboratories Europe in Heidelberg, Germany. His research interests include mobile computing, AI/ML, and cloud-edge systems aspects of IoT with a particular focus on crowd mobility in smart cities as well as autonomous vehicles/drones in IoT applications. He received his BS degree in Computer Engineering from Middle East Technical University (METU) in Turkey and his MS and Ph.D. degrees in Computer Science from the University of Central Florida (UCF) in the USA. He co-authored more than 35 papers and he was co-recipient of two best paper awards and the UCF Computer Science Ph.D. Student of the Year First Runner-up award. He has been a regular member of the technical program committees of IEEE conferences and a member of IEEE, Communications Society (ComSoc), ACM, SIGMOBILE, and ACM Future of Computing Academy (FCA).