



## Robot Learning Workshop

October 14-15, 2019

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### **Deep Learning for Semantic Visual Navigation**

One of the fundamental problems for autonomous intelligent agents is the ability to move in visually and spatially complex environments for the purpose of finding objects, places, etc. This problem, commonly referred to as Visual Semantic Navigation, has been heavily studied in various settings. However, in its generality, unexplored and dynamic environments, complex semantics, continuous adaptation to the environment, it still presents many challenges. Deep Learning, by enabling models to learn complex concepts from experience, has huge potential in solving these challenges.

In this talk, we present a framework towards a learning-based solution for Visual Semantic Navigation. We focus on two recent results. First, we talk about visual representations suitable for learning navigation algorithms. These representations result in systems for object-driven navigation that generalize to unexplored environments and utilize large synthetic data. Second, we present an approach towards continuous exploration of a novel environment using a model with general external memory.