Machine Learning for Robust Autonomy

Increased use of autonomous systems can provide organizations, military and civilian, enormous capability increases while simultaneously reducing operation and manpower costs. Automated and unmanned systems developed in recent decades have made great strides and have changed how we live, do business and fight wars. Unfortunately, these systems lack the robustness to meet the emerging challenges we face in an increasingly complex, rapidly changing, and highly uncertain world. Machine learning technologies have the potential to provide robust autonomous systems by enabling them to learn from past experiences and adaptively optimize performance according to a changing environment. Still, many challenges must be overcome before machine learning can become ready for widespread use in autonomous systems. The objective of this workshop is to enhance the understanding of challenges and opportunities from the next generation of robust autonomous systems and discuss recent advances in machine learning which attempt to address these challenges. This workshop will bring together researchers, scientists and engineers from diverse backgrounds along with military and industrial domain experts.

WORKSHOP B LEAD

Dr. Lei Yu

Lei Yu is currently an Associate Professor of the Department of Computer Science at State University of New York, Binghamton. He received his Ph.D. in Computer Science from Arizona State University in 2005. His primary research interests are in the areas of machine learning and data mining. His research focuses on developing highly scalable and robust feature selection and space abstraction methods for problems involving high-dimensional feature spaces, and designing efficient algorithms to enable effective learning and knowledge discovery for real-world applications in computational biology, social computing, and autonomous control. Some of his recent research on scalable machine learning for autonomous control has been supported by the Visiting Faculty Research Program and grants from the Air Force Research Lab.