



SAN DIEGO STATE
UNIVERSITY

Department of Electrical and Computer Engineering

EE600: Machine Learning **Instructor: Dr. Junfei Xie**

Machine learning, a discipline that deals with the automatic design of models from data, has been successfully used in the past few decades for data analysis, process automation, function optimization, model building, and many others. These techniques have been explored in a diversity of fields such as robotics, self-driving cars, big data, control of autonomous systems, image analysis, object recognition, data mining, business, and financial forecasting, transportation systems, antenna design, medical care systems, and many others. It is believed by many researchers that machine learning is the best way to enable human-level artificial intelligence.

This course provides a broad introduction on the key machine learning techniques. The main topics to be covered include probability theory, linear regression, logistic regression, neural networks, decision trees, clustering, Bayesian estimation, dimension reduction, Markov and hidden Markov models. In this course, students will not only learn these machine learning techniques, but also gain practice implementing them using programming tools such as Matlab, Python or R. Students will also explore real-life applications of machine learning and learn to solve the application problem using machine learning techniques.



Dr. Junfei Xie is an Assistant Professor in the Department of Electrical and Computer Engineering at San Diego State University. Dr. Xie received a B.S. degree in Electrical Engineering from University of Electronic Science and Technology of China (UESTC), Chengdu, China, in 2012. She received an M.S. degree in Electrical Engineering in 2013 and a Ph.D. degree in Computer Science and Engineering from University of North Texas, Denton, TX, in 2016. Before joining San Diego State University, Dr. Xie was an Assistant Professor in the Department of Computing Sciences at Texas A&M University-Corpus Christi. She was the recipient of multiple awards including the Wanda J. Schafer Graduate Scholarship from Women's Transportation Seminar (WTS) and the Master's/Doctoral Fellow Award from University of North Texas. Dr. Xie has also received multiple research grants from NSF, TAMUCC and TEES. She has served as a reviewer for over 30 journals and international conferences. Her current research interests include large-scale dynamic system design and control, managing and mining spatiotemporal data, unmanned aerial systems, distributed computing, airborne networks, complex information system, and air traffic flow management, etc.