

# PROFESSIONAL MASTER'S PROGRAM

## ELECTRICAL ENGINEERING



### PROFESSIONAL DEVELOPMENT

Coursework focuses on cutting-edge research themes and applications for professional growth.



### PREMIER INSTITUTION

The University of Washington's Electrical and Computer Engineering is recongized as a leading academic department.



### FLEXIBLE DEGREE

PMP offers evening courses allowing full-time students the flexibility to build their career by pursuing capstone projects and internships during the day.



### TOP COMPANIES

PMP students come from and go on to work for some of the biggest companies from around the world, including Boeing, Microsoft and Amazon.

## PMP PREPARES STUDENTS FOR NEW POSSIBILITIES

The University of Washington Electrical Engineering Professional Master's Program (PMP) focuses on modern technical topics and the latest university research, giving students the expertise needed to drive innovation. The program is designed for recent graduates, as well as professionals already working in the field. PMP offers courses on smart grid and renewable energy; systems, controls and robotics; electromagnetics; signal, image and video processing; embedded systems; machine learning; microelectromechanical systems; and wireless communications.

### CONTACT

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### APPLICATION DEADLINES

**JANUARY 5:** EARLY DEADLINE  
**MAY 15:** REGULAR DEADLINE

### APPLICATION INFO

[www.ece.uw.edu/academics/pmp/admissions/](http://www.ece.uw.edu/academics/pmp/admissions/)

**Address:** 185 Stevens Way, Seattle WA 98195

**Phone:** 206-221-5270

**Email:** [smlim@uw.edu](mailto:smlim@uw.edu)

**Website:** <http://www.ece.uw.edu/academics/pmp/>



**ELECTRICAL & COMPUTER ENGINEERING**



"This program offered immense opportunities for me. I was able to pursue higher education, gain a deeper insight into my areas of interest within electrical and computer engineering and explore the endless potential of embedded systems, while building my career"

**DHRUV SAKSENA**, PMP graduate

## **SAMPLE COURSEWORK IN PMP**

### **DATA SCIENCES FOR POWER SYSTEMS**

Covers data science applications for power systems operations and control. Focuses on the management and analytics of multi-domain multi-resolution data (PMUs, SCADA, weather, renewables, customer load), especially on understanding how to integrate advanced data science tools with legacy physical infrastructures.

### **THE SELF-DRIVING CAR – INTRODUCTION TO AI FOR MOBILE ROBOTS**

Provides an introduction to control, perception, and state estimation for mobile robots. Reviews the implementation of algorithms that allow robots to autonomously navigate through their environment. Applies concepts learned in lecture to a mini race car platform in order to develop a self-driving vehicle.

### **MACHINE LEARNING FOR BIG VISUAL DATA**

Introduces useful features and distance measures associated with big visual data. Covers unsupervised learning and supervised machine learning, neural network and deep learning, as well as the reinforcement learning approaches. Addresses hidden Markov model to address temporal visual data. Explores machine learning techniques with applications to image object detection and recognition, as well as application to video object segmentation and tracking.

### **MICROFABRICATION**

Covers principles and techniques for the fabrication of micro and nanoscale integrated circuits and Micromechanical Systems (MEMS). Emphasizes fabrication best practices, chemical safety, layout and mask making, photolithography, wet and dry etching, and dielectric and metal deposition using high vacuum and plasma processing equipment. Highlights process integration and troubleshooting. Laboratories held in the state of the art Washington Nanofabrication Facility.

### **WIRELESS NETWORKS FOR 4G/5G**

Introduction to selected topics in 4G/5G oriented wireless communication networks. Reviews principles and design fundamentals of two major broadband wireless network technology standard families: 802.11 WLANs and LTE/LTE-Advanced. Utilizes the open-source ns-3 network simulator via a set of experiments using existing basic wireless, 802.11 and LTE protocol stack implementations in ns-3 .

### **EMBEDDED AND REAL-TIME SYSTEMS**

Focuses on the characterization of embedded hardware and software through practical exploration. Covers a specific hardware platform, system software, computation limits, architecture analysis, and physical world interaction. Introduces power management, reliability, safety-critical systems, and simulation.

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