



OPUS
College of Engineering

MARQUETTE UNIVERSITY

Electrical and Computer Engineering

COEN 4890/EECE 5890 Spring 2024

Developments in Computing: Applications of Artificial Intelligence and Natural Language Processing



Industrial Remote Monitoring



Battery Aging Estimation



Wind Turbine Fault Detection



Energy Consumption Prediction

- 💡 Define **AI application scenarios** according to their industrial, analytic, and business functions
- 💡 Identify appropriate solutions based on **AI case studies**
- 💡 Recognize how industry developers format **AI code**
- 💡 Applicable to **Systems Engineering Certificate**
- 💡 Applicable to **Machine Learning Certificate**
- 💡 **COEN Majors**, course counts as a depth-only elective in **Intelligent Systems**
- 💡 **ELEN Majors**, course counts as a depth-only elective in **Computer HW/SW**

💡 Student Feedback

- Very flexible course!
- Can learn how to apply ML, AI, and NLP for industry use!
- Walkthrough, and explanation for all coding!



Instructor:

Dr. Priya Deshpande, EECE, Marquette University.



COURSE FORMAT

- 📖 Asynchronous Online Lecture
- 📖 Active Discussion and Q&A Forums in D2L Led by Instructor
- 📖 Hands-on Coding Lab and Projects with Real Industry Data

PROJECT EXAMPLES

- 💡 **Predictive Analysis**
 - ⬆ Breast Cancer Detection and Prediction
- 💡 **Virtual Metrology**
 - ⬆ Planarization of Semiconductor Wafers
- 💡 **Energy Management**
 - ⬆ Facility Energy Consumption Prediction
- 💡 **Machine Vision**
 - ⬆ Quality Inspection of Steel Components
- 💡 **Scheduling Optimization**
 - ⬆ Flexible Job-shop Scheduling

Or Propose Your Own Topic