

COEN 4890/EECE 5890 FALL 2021  
**Developments in Computing:  
 Artificial Intelligence for Industrial Applications**



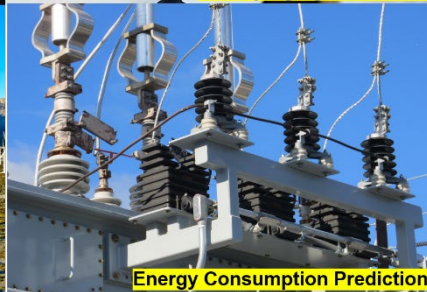
Industrial Remote Monitoring



Battery Aging Estimation



Wind Turbine Fault Detection



Energy Consumption Prediction

- 💡 Define **Industrial AI application scenarios** according to their industrial, analytic, and business functions
- 💡 Identify appropriate solutions based on **Industrial AI case studies**
- 💡 Recognize how industry developers format **Industrial AI code**
- 💡 Work through the **AI problem solving process**, including data preprocessing, feature extraction, data modeling and prediction, and data visualization
- 💡 Gain valuable insight on **common industrial processes** including equipment maintenance, virtual metrology, energy management, defect detection, material sorting, and scheduling

 **Instructor:**  
 Dr. Dong Hye Ye, ECE, Marquette University.

**COURSE FORMAT**

- 📖 Asynchronous Online Lectures created by Foxconn iAI
- 📖 Active Discussion and Q&A Forums in D2L led by Instructor
- 📖 Hands-on Coding Lab and Projects with Real Industry Data

**PROJECT EXAMPLES**

- 💡 **Predictive Maintenance**
  - ⬆ Turbofan Engine Lifetime Estimation
- 💡 **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