CAIHAO (CALVIN) WENG

CONTACT INFORMATION	3030 Randolph Court Dr. Ann Arbor, MI 48108	Mobile: +1-734-757-0403 E-mail: chsweng@umich.edu

CORE AREAS OF EXPERTISE

Statistical modeling, Regression analysis, Machine learning, Support Vector Machines, Optimization theory, Linear/Nonlinear programming, Estimation algorithms

EDUCATION

UNIVERSITY OF MICHIGAN, Ann Arbor, MI

Ph.D., Marine Engineering, GPA: 3.92/4.0 — Sept. 2015

Thesis Topic: Data-driven Modeling and Optimization with Applications to Battery Energy Management and On-board Diagnosis
- Developed predictive battery degradation model using support vector regression and linear programming algorithms from experimental data
- Revised the algorithm through invariance analysis of data characteristics
- Improved computational efficiency for real-time implementation

M.S.E., Industrial and Operations Engineering — Sept. 2015
- Major Area: Mathematical Programming/Operations Research

M.S.E., Electrical Engineering: Systems — May 2013
- Major Area: Control Systems; Minor Area: Signal Processing

SELECTED PUBLICATIONS (OUT OF 7)

C. Weng, J. Sun and H. Peng, "Model Parametrization and Adaptation Based on the Invariance of Support Vectors with Applications to Battery State-of-Health Monitoring," Accepted to *IEEE Transactions on Vehicular Technology*, 2014.

C. Weng, Y. Cui, J. Sun and H. Peng, "On-board State of Health Monitoring of Lithium-ion Batteries Using Incremental Capacity Analysis with Support Vector Regression," *Journal of Power Sources*, 2013.

PROFESSIONAL EXPERIENCE

EATON CORPORATION - INNOVATION CENTER, Southfield, MI

Research Intern — June - Aug. 2011
- Developed predictive algorithm that integrates road and traffic data in vehicle energy management, improving fuel efficiency by 5%.

Research Intern — June - Aug. 2010
- Designed a dynamic programming based model predictive control algorithm for hybrid electric vehicles (30% more efficient than conventional controller).
- Summarized and published research results as a technical paper (presented at 2011 American Control Conference).

AWARDS AND HONORS
- College of Engineering Dean's Named Fellowship
- James B. Angell Scholar
- American Bureau of Shipping Scholarship

SKILLS
- Programming skills in Python (scikit-learn, pandas), MATLAB and C/C++
- Expertise in mathematical modeling, simulation and optimization
- Extensive experience with quantitative analysis of large data sets
- Technical writing and communication skills
- Passed CFA Level I Exam