JUN CHEN, PH.D., ASSOCIATE PROFESSOR

(Updated 10/2025; Do Not Redistribute)

CONTACT

Department of Electrical and Computer Engineering
Oakland University, Rochester, MI 48309, USA

248-370-4797 | junchen@oakland.edu
www.secs.oakland.edu/∼junchen | jchen2020.net

EDUCATION

Ph.D. in Electrical Engineering (minor in CS), Iowa State University, Ames IA, 4.0/4.0 — 12/2014

B. S. in Automation, Zhejiang University, Hangzhou China — 06/2009

RESEARCH INTERESTS

Systems and Control: Model predictive control, optimal control, stochastic processes, event-triggered control

Artificial Intelligence: Reinforcement learning, deep learning, time series, generative adversary network

Intelligent Systems: Autonomous vehicles, electric vehicles, robotics, human-centered computing

Power & Energy: Battery management systems, hybrid energy systems, renewable energy, power electronics

Discrete Event and Hybrid Systems: failure diagnosis and prognosis, resiliency, privacy, verification

EMPLOYMENT

Oakland University, Rochester, MI, USA
- **Associate Professor**, Department of Electrical and Computer Engineering — 08/2024–present
- Assistant Professor, Department of Electrical and Computer Engineering — 08/2020–08/2024

General Motors, Michigan, USA
- Senior Control Systems Engineer, Vehicle and Propulsion Control, Milford — 01/2017–08/2020
- Summer Intern, Software V&V, Warren (GM R&D) — 04/2014–07/2014

Idaho National Laboratory, Idaho Falls, ID, USA
- R&D Scientist, Power and Energy Systems — 11/2014–12/2016

HONORS AND RECOGNITIONS

NSF CAREER Award, National Science Foundation — 2022

Best Paper Award, IEEE Transactions on Automation Science and Engineering — 2016

Best Paper Award, IEEE International Conference on Electro-Information Technology — 2023

IEEE Senior Member — 2020

Associate Editor, American Control Conference — 2024–present

Associate Editor, Modeling, Estimation, and Control Conference — 2024–present

Associate Editor, IEEE Conference on Control Technology and Applications — 2023–present

Outstanding Graduate Mentor Award, Oakland University — 2025

Most Research Active Award, Oakland University — 2024

New Investigator Research Excellence Award, Oakland University — 2024

Most Active Grant Seeker Award, Oakland University — 2023 & 2024

Oakland County 40 Under 40, Oakland County — 2024

NSF CMMI Game Changer Academies (C-GCA) Panel Fellow, NSF — 2024

Faculty Recognition Award for Research, Oakland University — 2023

R&D 100 Award, R&D World — 2023

Associate Editor, IEEE International Conference on Robotics and Automation — 2020

INL Publication Achievement Award, Idaho National Laboratory — 2016

INL Exceptional Contributions Program Award, Idaho National Laboratory — 2015 & 2016

Research Excellence Award, Iowa State University — 2014

Student Travel Award, American Control Conference — 2014

Third Class Scholarship for Undergraduate Student, Zhejiang University — 2008

Outstanding Student, Zhejiang University — 2008

HONORS BY MY ADVISEES

Student Grant (Wanqun Yang), Modeling, Estimation and Control Conference — 2025

SECS Best Graduate Paper Award (Zhaodong Zhou), Oakland University — 2024

Undergraduate Research Competition Winner (Steven DeCoste), ASME ICE Division — 2022

GRANTS AND CONTRACTS

Total: ∼$5.7m; As lead/sole PI: ∼$2.2m; Personal share: ∼$2.4m

Federal Funding (∼$4.7m)

[6] **Jun Chen**, $334,218, "Collaborative Research: Scalable Privacy Verification and Quantification for Multi-Robot Systems," 10/2025–09/2028, National Science Foundation, NSF-FRR. (Collaborative project with Dr. Feng Lin from Wayne State University; Total project budget $553,335; Lead institution – OU)

[5] **Jun Chen**, $320,000, "Sensor-lean Estimation and Monitoring for Second Life EV Batteries," 05/2025–04/2028, National Science Foundation, NSF-ECCS-EPCN.

[4] Ankun Yang, **Jun Chen** (co-PI), Xia Wang, Yongsoon Yoon, Dan DelVescovo, Daniel Aloi, Shadi Alawneh and Mohammad Sedigh Toulabi, $3,000,000, "Next-Gen Electrification Testing and Standards Facility: from Materials to Vehicles," 10/2024–09/2026, National Institute of Standards and Technology.

[3] Brian Dean, Shadi Alawneh, S. Ali Arefifar, **Jun Chen** (Senior Personel), Subramaniam Ganesan, Jia Li, Daniel R Llamocca, Wing-Yue Geoffrey Louie, Hongwei Qu, Anita Sampath and Alycen Wiacek, $442,853, "REU Site: Applied Research Experience in Electrical and Computer Engineering (ApREECE)," 09/2024–08/2027, National Science Foundation, NSF-EEC.

[2] **Jun Chen**, $55,000, "Energy-aware Vertical Motion Control," 05/2024–10/2024, National Science Foundation, NSF-ECCS-EPCN. (INTERN Supplement to "CAREER: Reconfigurable and Predictive Control with Reinforcement Learning Supervisor for Active Battery Cell Balancing".)

[1] **Jun Chen**, $500,000, "CAREER: Reconfigurable and Predictive Control with Reinforcement Learning Supervisor for Active Battery Cell Balancing," 01/2023–12/2027, National Science Foundation, NSF-ECCS-EPCN.

State/Industry Funding (∼$646k)

[10] **Jun Chen**, $125,055, "Sensor Reduction for Large Battery Packs (Year 2)," 09/2025–08/2026, Michigan Translational Research and Commercialization (MTRAC) for Advanced Transportation Innovation Hub.

[9] **Jun Chen**, $55,000, "Affordable Autonomous Vehicle Platform for University Research and Education," 09/2025–08/2026, MEDC ADVANCE Proof-of-Concept Fund.

[8] Mihai Burzo, Linda Zhu and **Jun Chen** (Senior Personel), $40,000, "Real-time Integrated Multimodal Sensory (RIMS) System for Road Surface Condition Monitoring in Vehicles ," 02/2025–01/2026, MEDC ADVANCE Proof-of-Concept Fund.

[7] **Jun Chen**, $126,374, "Sensor Reduction for Large Battery Packs," 09/2024–08/2025, Michigan Translational Research and Commercialization (MTRAC) for Advanced Transportation Innovation Hub.

[6] **Jun Chen**, $25,000, "Optimal Scheduling of Edge Devices for Decentralized Data Preprocessing," 06/2024–05/2025, NSF IUCRC eCAT Center.

[5] **Jun Chen**, $40,000, "Sensor Reduction for Battery Cell State-of-Charge Estimation," 01/2024–12/2024, MEDC ADVANCE Proof-of-Concept Fund.

[4] Yang Chen, **Jun Chen** (co-PI) and Om Prakash Yadav, $75,000, "Ocean Energy Supported Multi-Energy System Planning and Operation Optimization for Sustainable Coastal Community," 07/2023–06/2024, Coastal Studies Institute, North Carolina Renewable Ocean Energy Program.

[3] **Jun Chen**, $120,000, "Inverse Reinforcement Learning-based Personalized Motion Planning and Control," 06/2022–05/2024, NSF IUCRC Center on Pervasive Personalized Artificial Intelligence.

[2] **Jun Chen**, $10,000, "Impacts of Battery Cell Imbalance and Mitigation by AI and Controls," 05/2022–05/2023, Michigan Space Grant Consortium.

[1] **Jun Chen**, $30,000, "Development of Digital Twin for Robotic Combat Vehicles," 09/2021–12/2021, Intelligent Fusion Technology, Inc.

Internal/Institutional Funding (∼$194k)

[8] **Jun Chen**, $100,000, "Continuing Development of ELectrified and Intelligent Systems Automation (ELISA) Lab," 09/2025–08/2027, Provost Office, Oakland University.

[7] **Jun Chen**, $10,000, "Development of a Virtual Reality Environment for Autonomous Vehicle Personalization," 05/2025–04/2026, University Research Committee, Oakland University.

[6] **Jun Chen**, $3,000, "Open Source Textbook for ECE4400 Automatic Control Systems," 05/2024–04/2025, Oakland University Affordable Course Materials Initiative (ACMI).

[5] **Jun Chen**, $10,000, "Extending Electric Vehicle Driving Range using Artificial Intelligence," 05/2023–04/2024, University Research Committee, Oakland University.

[4] **Jun Chen**, $10,000, "Model Predictive Control Algorithm and Tool Development for Embedded Automotive Control," 05/2021–04/2022, University Research Committee, Oakland University.

[3] **Jun Chen**, $60,000, "New Faculty Start-up Equipment Fund," 08/2020–06/2024, School of Engineering and Computer Science, Oakland University.

[2] **Jun Chen**, $550, "Student Travel Award for 2014 American Control Conference," IEEE Control Systems Society and National Science Foundation, 06/2014.

[1] **Jun Chen**, $700, "Professional Development Grant," Graduate College, Iowa State University, 08/2013–07/2014.

In Preparation

[2] **Jun Chen** and Wen-Chiao Lin, $600,000, "GOALI: XYZ-Integrated Fault Mitigation for Autonomous Vehicles with Reduced Drivability," 06/2026–05/2029, NSF-CMMI-DCSD. (To Be Submitted November 2025.)

[1] **Jun Chen**, $300,000, "Collaborative Research: Safety-aware Predictive Control for Individualized Battery Management of Large Reconfigurable Battery Energy Storage Systems," 06/2026–05/2029, NSF-ECCS-EPCN. (To Be Submitted December 2025.)

Pending

[7] **Jun Chen**, $50,000, "I-Corps: Sensor-lean Battery Management Systems," 06/2026–05/2027, NSF-TIP. (Submitted October 2025.)

[6] **Jun Chen** and Caisheng Wang, $200,725, "Immersive Thermal Management for Electrified Vehicles," 01/2026–12/2026, U.S. Army Automotive Research Center. (White Paper Submitted in August 2025; Full proposal submitted in October 2025.)

[5] **Jun Chen**, $600,000, "NSF TTP-E: Sensor-lean Battery State Estimation for Large Battery Packs," 01/2026–12/2029, NSF-TIP-TTP. (Submitted October 2025.)

[4] **Jun Chen**, $250,000, "Collaborative Research: CPS-FR: Toward Secure and Intuitive Shared Control for Human Motion-Controlled Ground-Air Robotic Systems," 01/2026–12/2029, NSF-CPS. (Collaborative proposal submitted with Dr. Chen Wang from Southern Methodist University and Dr. Huaxia Wang from Rowan University; Total project budget $999,733; Submitted September 2025.)

[3] **Jun Chen**, $383,750, "CPS: Small: A Demo-lean Learning and Control Framework for Autonomous Vehicles – When Online Meets Offline," 01/2026–12/2028, National Science Foundation, NSF-CPS. (Submitted July 2025.)

[2] **Jun Chen**, $203,391, "Collaborative Research: CPS: Medium: Safety-aware Trajectory Planning for Autonomous Vehicles Responding to Distracted Human Drivers in Mixed Traffic," 01/2026–12/2028, National Science Foundation, NSF-CPS. (Collaborative proposal submitted with Dr. Xiangyu Meng from Lousiana State University and Dr. Chen Wang from Southern Methodist University; Submitted June 2025.)

[1] **Jun Chen**, $384,827, "Asynchronous and Aperiodic Predictive Control for Large Interconnected Systems," 01/2026–12/2028, National Science Foundation, NSF-CMMI-DCSD. (Submitted June 2025.)

Submitted but Not Funded

[32] **Jun Chen**, Wing-Yue Geoffrey Louie and Kate Bowers, $249,887, "FMitF: Track III: Incorporating Formal Methods in Mechatronics and Robotics Curriculum," 09/2025–08/2028, NSF-CISE-FMitF. (Submitted January 2025; Declined)

[31] **Jun Chen**, $366,982, "HCC: Small: Teaching Autonomous Vehicles How to Drive – When Online Meets Offline," 06/2025–05/2028, NSF-IIS-HCC. (Submitted December 2024; Declined)

[30] Ankun Yang, **Jun Chen** and Xia Wang, $448,787, "IRES: Collaborative Research Activities with China on EV Batteries," 09/2025–08/2028, NSF-OISE-IRES. (Submitted October 2024; Declined)

[29] Huirong Fu, **Jun Chen**, Lanyu Xu, Darrin Hanna, Douglas Carr, Daniel Aloi, Tianle Ma, Yao Qiang and Osamah Rawashdeh, $2,000,000, "NRT: Industry-Academic Research Hub for Trustworthy AI, Cybersecurity, and Intelligent Mobility-A Crosscutting Initiative in Engineering, Commercialization, Policy, and Innovation," 08/2025–07/2030, NSF-EDU-DGE. (Submitted November 2024; Declined)

[28] **Jun Chen**, $100,000, "Development of an Immersive Training and Evaluation System for Personalized Autonomous Vehicles," 01/2025–12/2025, Sony Faculty Innovation Award. (Submitted in September 2024; Declined)

[27] **Jun Chen**, Wing-Yue Geoffrey Louie, Yongsoon Yoon, Aman Kaur, Hyungil Kim and Guangzhi Qu, $315,842, "MRI: Track 1: Acquisition of an Intelligent Electric Vehicle with Automated Driving Capability for Multidisciplinary Research and Education at Oakland University," 06/2024–05/2027, NSF-CMMI-MRI. (Submitted in November 2023; Declined.)

[26] **Jun Chen**, Wing-Yue Geoffrey Louie and Kate Bowers, $247,429, "FMitF: Track III: Incorporating Formal Methods in Mechatronics and Robotics Curriculum at Oakland University," 09/2024–08/2027, NSF-CISE-FMitF. (Submitted February 2024; Declined.)

[25] Ankun Yang, **Jun Chen** and Xia Wang, $449,684, "IRES: Collaborative Research Activities with China on EV Batteries," 09/2024–08/2027, NSF-OISE-IRES. (Submitted February 2024; Declined).

[24] **Jun Chen**, $334,316, "AI-based Learning Framework for Accelerating MPC Computation," 01/2024—12/2026, NSF-CMMI-DCSD. (Submitted August 2023; Declined)

[23] **Jun Chen**, $98,036, "Quantification of Secrecy Using Jensen-Shannon Divergence for Formation Control," 01/2024–12/2024, U.S. Army Automotive Research Center. (White paper submitted August 2023; Full proposal submitted October 2023; Declined.)

[22] **Jun Chen**, $356,112, "CPS: Small: Privacy-preserving Human-on-the-loop Estimation and Monitoring of Second Life EV Batteries," 5/2024–04/2027, NSF-ECCS-CPS. (Submitted July 2023; Declined.)

[21] Xiangyu Meng, Chen Wang and **Jun Chen**, $494,257, "CPS: Small: Safety Awareness Trajectory Planning of Connected and Autonomous Vehicles Triggered by Distracted Driving Behavior Detection in a Mixed Traffic Environment," 08/2023–07/2026, NSF-CISE-CPS. (OU portion $115,463; Submitted May 2023; Declined.)

[20] Christopher Cooley, Wing-Yue Geoffrey Louie and **Jun Chen**, $25,000, "Human-Robot Motion Symbiosis Through Soft Materials and Intelligent Control," 06/2023–05/2024, Oakland University SECS Research Seed Grant Competition. (Submitted March 2023; Declined.)

[19] **Jun Chen**, Xia Wang and Guangzhi Qu, $25,000, "Prediction of Cell Variations based on Artificial Intelligence for Battery Manufacturing Quality Control," 06/2023–05/2024, Oakland University SECS Research Seed Grant Competition. (Submitted March 2023; Declined.)

[18] **Jun Chen**, $191,405, "Collaborative Research: Learning-assisted Communication-aware Control of Reconfigurable and Modular Microgrids," 05/2023 –04/2026, NSF-ECCS-EPCN. (Collaborative proposal submitted with Dr. Wencong Su from University of Michigan-Dearborn; Submitted December 2022; Declined.)

[17] Luke Nuculaj and **Jun Chen**, $5,000, "Battery Cell Balancing with Model Predictive Control and Multi-Cell State Estimation," 05/2023–05/2024, Michigan Space Grant Consortium. (Graduate Fellowship proposal submitted by my mentee; Submitted November 2022; Declined.)

[16] **Jun Chen**, $200,000, "ERI: AI-based Learning Framework for Accelerating MPC Computation," 5/2023 –04/2025, NSF-CMMI-DCSD. (Submitted October 2022; Declined.)

[15] Brian Dean, Shadi Alawneh, S. Ali Arefifar, **Jun Chen** (Senior Personnel), Subramaniam Ganesan, Jia Li, Daniel R Llamocca, Wing-Yue Geoffrey Louie, Hongwei Qu, Anita Sampath and Alycen Wiacek, $402,998, "REU Site: Applied Research Experience in Electrical and Computer Engineering (ApREECE)," 05/2023 –04/2026, NSF-EEC-EWFD. (Submitted September 2022; Declined.)

[14] **Jun Chen**, $69,200, "ROBUST: Resilience Oriented Blockchain Ultimate Security Transactor," 10/2022–03/2023, U.S. Army STTR, subcontract from Intelligent Fusion Technology, Inc. (Submitted with Genshe Chen and Dan Shen from IFT for a total of $173,000; Submitted June 2022; Declined.)

[13] **Jun Chen**, $379,536, "Model-free Learning Framework for Accelerating MPC Computation," 01/2023–12/2025, NSF-ECCS-EPCN. (Submitted April 2022; Declined.)

[12] Zhaojian Li and **Jun Chen**, $50,000, "Integrated Thermal Management for Electric Vehicles with Efficient Neighboring Extremal Adaptations," 10/1/2022–09/30/2023, Ford Motor Company. (Submitted April 2022; Declined June 2022.)

[11] **Jun Chen**, $200,000, "DEPAD: Deep Evaluation Prognostic and Diagnostic with Probabilistic Knowledge Graphic (KG) Analytics for Robotic Combat Vehicles (RCV)," 03/2022–02/2024, U.S. Army SBIR, subcontract from Intelligent Fusion Technology, Inc. (Submitted with Genshe Chen from IFT; Submitted November 2021; Declined.)

[10] **Jun Chen**, $82,864, "Event-triggered Cloud-Aided Control using AWS Deepracer Platoon," 07/2022–06/2023, Amazon Research Awards. (Submitted September 2021; Declined April 2022.)

[9] **Jun Chen**, $199,560, "ERI: Distributed and Predictive Control with Reinforcement Learning Supervisor for Active Battery Cell Balancing," 01/2022–12/2023, NSF-ECCS-EPCN. (Submitted June 2021; Declined February 2022.)

[8] **Jun Chen**, $69,200, "SUCCESS: Security Unified Crypto Control-based Embedded Software Stack," 03/2022–08/2022, U.S. Army STTR, subcontract from Intelligent Fusion Technology, Inc. (Submitted with Genshe Chen and Dan Shen from IFT for a total of $173,000; Submitted October 2021; Declined.)

[7] **Jun Chen**, $121,583, "Methods for Characterizing the ADS Maneuver Execution Subsystem Capability and Performance," 09/2021–02/2023, NHTSA-IDIQ-VESS, subcontract from University of Michigan Transportation Research Institute. (Submitted with Arpan Kusari, David J. LeBlanc from UMTRI; Submitted July 2021; Declined.)

[6] **Jun Chen**, $285,451, "AI-Enhanced Model Predictive Control for Automotive Embedded Control," 09/2021–08/2024, NSF-CMMI-DCSD. (Submitted March 2021; Declined.)

[5] **Jun Chen**, $142,037, "Implementing and Leveraging Machine Learning at State Departments of Transportation," 06/2021–06/2023, NASEM-TRB-NCHRP, subcontract from University of Michigan Transportation Research Institute. (Submitted with Arpan Kusari, David J. LeBlanc from UMTRI for a total of $350,000; Submitted March 2021; Declined.)

[4] **Jun Chen** (PI), Ratnesh Kumar, Yusheng Luo and Rob Hovsapian, $950,000, "Formal Methods-based Framework for Intelligent Controller Testing and Verification for Clean Energy Integration," 10/2016–09/2019, DOE Laboratory Directed Research and Development Program. (Reviewing committee highly recommended for funding; Declined due to DOE budget cut.)

[3] Carlo Parisi, **Jun Chen** (Co-PI), Cristian Rabiti, $1,050,000, "Economic Evaluation of SMR Operational Modes," 10/2016–09/2019, DOE Laboratory Directed Research and Development Program. (Declined)

[2] Humberto E. Garcia, **Jun Chen** (Co-PI), Andrea Mammoli and Russ D. Robinett III, $975,000, "Exergy-based Tools for Physical-Informational Design and Operations Optimization of Efficient Clean Energy Deployments and their Realistic Demonstration," 10/2015–09/2018, DOE Laboratory Directed Research and Development Program. (Declined)

[1] Kevin L. Gering, Humberto E. Garcia, **Jun Chen** (Co-PI) and Eric T. Whiting, $575,000, "Science of Performance for Combined Modeling Approach to Battery Health and Lifecycle Analysis," 10/2015–09/2017, DOE Laboratory Directed Research and Development Program. (Declined)

White Paper Not Encouraged for Full Proposal

[14] Mihai Burzo, Linda Zhu and **Jun Chen**, $450,000, "Tire Health Monitoring for Resilient Autonomous Off-Road Vehicles Using Multi-Modal Sensing and Machine Learning," 01/2026–12/2028, U.S. Army Automotive Research Center. (White Paper Submitted in August 2025; Declined)

[13] **Jun Chen**, $450,000, "Demo-lean Learning from Correction for Intelligent Autonomous Vehicles," 01/2026–12/2028, U.S. Army Automotive Research Center. (White Paper Submitted in August 2025; Declined)

[12] Caisheng Wang, **Jun Chen** and Lihua Chen, $2,000,000, "Advanced Immersion Cooling for Electric Vehicles (AICE)," 01/2026–12/2028, DOE VTO. (Concept Paper Submitted March 2025; Declined)

[11] **Jun Chen**, $350,000, "Quantification of Secrecy Using Jensen-Shannon Divergence for Formation Control," 01/2025–12/2027, U.S. Army Automotive Research Center. (White Paper Submitted in August 2024; Declined)

[10] **Jun Chen**, Genshe Chen and Sixiao Wei, $500,000, "Repurposing and Cybersecurity of Second Life EV Batteries," 09/2024–02/2026, DOE ARPA-E SPARKS. (Concept Paper Submitted December 2023; Declined).

[9] **Jun Chen**, $300,000, "EAGER: TaskDCL: Cloud-assisted Learning and Control for Cooperative ADAS Under Privacy Constraints," 09/2024–08/2027, NSF-CMMI-M3X. (Concept Outline Submitted October 2023; Declined.)

[8] Yang Chen, **Jun Chen** and Tanveer Hossain Bhuiyan, $500,000, "Excellence in Research: Pre-event Resource Allocation Optimization with Decision Evaluation by Agent-based Simulation," 06/2024–05/2027, NSF-EiR. (Letter of Intent Submitted July 2023.)

[7] **Jun Chen** and Yang Chen, $500,000, "RAISE: CET: Resilient Optimal Control of Offshore Hybrid Energy Systems Integrating Wave Energy," 5/2024–04/2027, NSF-RAISE-CET. (Concept Outline Submitted June 2023; Declined.)

[6] **Jun Chen**, $875,000, "Design, Calibration, and Validation of Large-Scale Distributed Intelligent Control through Reinforcement Learning," 09/2023–08/2028, DOE Office of Science. (Pre-application submitted December 2022; Discouraged.)

[5] **Jun Chen**, Aman Kaur, Hyungil Kim, Wing-Yue Geoffrey Louie, Khalid Mirza, Guangzhi Qu and Yongsoon Yoon, $323,283, "MRI: Acquisition of an Intelligent Electric Vehicle with Automated Driving Capability for Multidisciplinary Research and Education at Oakland University," 09/2023–08/2026, NSF-CMMI-DCSD. (Submitted to OU Research Office December 2022; Not selected by OU RO.)

[4] **Jun Chen**, $200,000, "Collaborative Sensing for Terrain Profile Estimation Using Robotic Combat Vehicle Suspension Systems," 01/2023–12/2024, U.S. Army Automotive Research Center. (White Paper Submitted August 2022; Declined.)

[3] **Jun Chen** and Ka Choek, $120,000, "Scale Vehicle Platform for STEM Education in Connected and Automated Vehicles," 06/2022–05/2023, General Motors. (Letter of Inquiry Submitted September 2021; Declined.)

[2] **Jun Chen** and Wing-Yue Geoffrey Louie, $250,000, "Shared Control Among Human, Cloud Computing, and Local Autonomy," 01/2022–12/2023, U.S. Army Automotive Research Center. (White Paper Submitted August 2021; Declined.)

[1] **Jun Chen**, $350,000, "Stability of Constrained Model Predictive Control," 01/2022–12/2024, Air Force Office of Scientific Research. (White Paper Submitted August 2021; Declined.)

PUBLICATIONS

(h-index: 24; underline: students under my close supervision; *: corresponding author)

Patents

[5] **Jun Chen** and Luke Nuculaj, "State-of-charge Estimation System and Method," (USPTO Provisional Application Filed April 2025; Serial No. 63/795,912.)

[4] Min Sun, Yiran Hu, David Edwards, **Jun Chen**, Insu Chang and Steven Moorman, "Active Thermal Management System and Method for Flow Control," U.S. Patent No. US11312208 B2, April 26, 2022.

[3] **Jun Chen**, Ruixing Long and Yiran Hu, "Method for Increasing Control Performance of Model Predictive Control Cost Functions," U.S. Patent No. US11192561 B2, December 7, 2021.

[2] Yiran Hu, David Edwards, Michael Paratore Jr, Min Sun, **Jun Chen**, Eugene Gonze and Sergio Quelhas, "Method and Apparatus for Control of Propulsion System Warmup Based on Engine Wall Temperature," U.S. Patent No. 11078825 B2, August 3, 2021.

[1] **Jun Chen**, David Edwards, Yiran Hu, Min Sun, Adam J. Heinzen and Michael A. Smith, "Method and System for Determining Thermal State," U.S. Patent No. 10995688 B2, May 4, 2021.

Book Chapters

[3] Ali Irshayyid and **Jun Chen***, "Highway Platoon Merging Control using RL: A Review," in *Control, Learning, and Optimization with Applications in Connected and Autonomous Vehicles*, (To appear in 2026).

[2] Kaixiang Zhang, **Jun Chen**, Weichao Zhuang and Zhaojian Li, "Privacy-Conscious Data-Enabled Predictive Leading Cruise Control via Affine Masking," in *Control, Learning, and Optimization with Applications in Connected and Autonomous Vehicles*, (To appear in 2026).

[1] Mariam Ibrahim, **Jun Chen** and Ratnesh Kumar, "Quantification of Centralized/Distributed Secrecy in Stochastic Discrete Event Systems," in *Recent Advances in Systems Safety and Security*, Editors: Emil Pricop and Grigore Stamatescu, Springer, May 2016, ISBN: 978-3-319-32523-1.

Editorial

[2] **Jun Chen**, Xiangyu Meng and Weinan Gao, "Preface: Recent Advances on Learning-Based Control - Theory and Application," *International Journal of Modelling, Identification and Control*, volume 43, number 3, pages 177-178, October 2023.

[1] **Jun Chen**, Qin Wang, Jianming Lian and Wanning Li, "Guest Editorial: Advances in Control and Decision for Power and Energy Systems," *Journal of Control and Decision*, volume 5, number 2, pages 115–116, February 2018.

Pending Journal Articles

[13] Ali Irshayyid and **Jun Chen***, "State-of-health Prediction using Graph Neural Networks," *IEEE Transactions on Transportation Electrification*, (In preparation).

[12] Ali Irshayyid and **Jun Chen***, "Surrogate Model for Reconfigurable Battery Packs using Graph Neural Networks," *IEEE Transactions on Automation Science and Engineering*, (In preparation).

[11] Luke Nuculaj and **Jun Chen***, "Stability Analysis of the Dense Extended Kalman Filter for Simultaneous Cell State-Parameter Estimation," *IEEE/CAA Journal of Automatica Sinica*, (In preparation).

[10] Wanqun Yang, Ranya Badawi and **Jun Chen***, "Event-triggered Model Predictive Control for Buck Converter," *Journal of Dynamic Systems, Measurement, and Control*, (Submitted October 2025).

[9] Wanqun Yang, Ali Irshayyid and **Jun Chen***, "A Hybrid MPC Approach for Real-time Balancing Control of Reconfigurable Battery Packs," *IEEE Transactions on Control Systems Technology*, (Submitted October 2025).

[8] Tingjun Lei, Samuel Steen, Chaomin Luo, Yaqun Yuan and **Jun Chen**, "Attention-Aware Bio-Inspired Coordination Framework for Intelligent Healthcare Service Robots," *International Journal of Advanced Robotic Systems*, (Submitted October 2025).

[7] Feng Lin, Caisheng Wang, **Jun Chen** and Xiang Yin, "Deterministic and Nonblocking Supervisory Control of Discrete Event Systems under Cyber Attacks," *IEEE Transactions on Dependable and Secure Computing*, (Submitted October 2025).

[6] Ali Irshayyid, Wen-Chiao Lin, Huirong Fu, Chong Li and **Jun Chen***, "Highway Merging Control Using Multi-Agent Reinforcement Learning," *IEEE Transactions on Intelligent Vehicles*, (Revision Submitted October 2025)

[5] Hussein Alawsi, Zhaodong Zhou, Ali Irshayyid and **Jun Chen***, "Automated Parking for Autonomous Vehicles using Reinforcement Learning and Model Predictive Control," *IET Cyber-Systems and Robotics*, (Submitted September 2025)

[4] Fei Wang, Feng Lin and **Jun Chen**, "Information Control in Networked Multi-User Discrete Event Systems Using State Estimates," *IEEE Transactions on Automation Science and Engineering*, (Submitted September 2025)

[3] Ali Irshayyid, Wanqun Yang and **Jun Chen***, "Real-time Balancing Control of Reconfigurable Battery Packs using Reinforcement Learning," *IEEE Transactions on Transportation Electrification*, (Submitted August 2025)

[2] Zhaodong Zhou and **Jun Chen***, "Event-triggered MPC with Linear Inter-event Control for AV Path Tracking," *IEEE Robotics and Automation Letters*, (Submitted July 2025)

[1] Nana Duah, Yang Chen*, Om Prakash Yadav and **Jun Chen**, "Ocean Energy Supported Multi-Energy System Planning and Operation Optimization for Sustainable Coastal Community," *Sustainable Energy, Grids and Networks*, (Submitted April 2025)

Pending Conference Articles

[6] Ali Irshayyid, Wanqun Yang and **Jun Chen***, "Real-time Balancing Control of Reconfigurable Battery Packs using Reinforcement Learning with Variance-based Reward Function," *IEEE International Conference on Systems, Man, and Cybernetics*, Bellevue, WA, October 4–7, 2026. (In preparation)

[5] Yunge Li, Zhaodong Zhou, Shaibal Saha, Ali Irshayyid, Keer Chen, Lanyu Xu, **Jun Chen**, "Development of a Scaled Autonomous Vehicle for Intelligent Ground Vehicle Competition," *IEEE International Conference on Mobility: Operations, Services, and Technologies*, Detroit, MI, May 4–6, 2026. (In preparation)

[4] Luke Nuculaj and **Jun Chen***, "Dense Extended Kalman Filter for Simultaneous Cell State-Parameter Estimation," *American Control Conference*, New Orleans, LA, May 26-29, 2026. (Submitted September 2025)

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- GitHub: https://github.com/jchenee2015/jetracer-4ws
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[2] "RL-eMPC for AV", Oakland University and Michigan State University, MI, USA
- A simulation environment to test RL-based event-triggered MPC for AV lateral motion control.
- GitHub: https://github.com/DangFengying/RL-based-event-triggered-MPC
- Role: Principle Investigator.

[3] "Risk Analys Virtual ENvironment (RAVEN)," Idaho National Laboratory, ID, USA
- **R&D 100 Award, 2023**, link
- URL: https://raven.inl.gov/SitePages/Overview.aspx
- GitHub: https://github.com/idaholab/raven
- Contribution: time dependent data mining, stochastic optimization, and synthetic data generation

STUDENTS SUPERVISED

Postdoc and Ph.D. Students (3 completed; 9 in progress)

[1] Dr. Ali Irshayyid, Postdoc, Department of Electrical and Computer Engineering, Oakland University, started 01/2025. (Publications: C37.)

[2] Gaurav Suhas Agalave, Ph.D. student in Electrical and Computer Engineering, Department of ECE, Oakland University. (Topic TBD; Started 09/2025.)

[3] Yara Mahmoud, Ph.D. student in Electrical and Computer Engineering, Department of ECE, Oakland University. (Started 09/2025.)

[4] Luke Nuculaj, Ph.D. student in Electrical and Computer Engineering, Department of ECE, Oakland University. (Topics TBD; Started 05/2025; Passed qualifying exam 10/2025.)

[5] Khaled Alsharif, Ph.D. student in Electrical and Computer Engineering, Department of ECE, Oakland University. (Battery SOC estimation; Started 05/2025.)

[6] Wanqun Yang, Ph.D. student in Electrical and Computer Engineering, Department of ECE, Oakland University. (Battery thermal management; Started 02/2024; Publications: J43, C39.)

[7] Thirumal Siruvole, Ph.D. student in Electrical and Computer Engineering, Department of ECE, Oakland University. (Topics TBD; Started 01/2023.)

[8] Dalitso Kuntambila, Ph.D. student in Systems Engineering, Department of ECE, Oakland University. (Physics-informed deep learning for battery state-of-health estimation; Started 01/2023; Passed qualifying exam 10/2023.)

[9] Zhaodong Zhou, Ph.D. student in Electrical and Computer Engineering, Department of ECE, Oakland University. (Autonomous vehicles control; Started 01/2022; Passed qualifying exam 10/2023; Passed proposal exam 04/2025; **Best Paper Award** from 2023 IEEE EIT Conference; **2024 Best Graduate Paper Award** from OU SECS; Publications: J26, J34, J41, J46, C28, C31, C34.)

[10] Hussein Alawsi, "Automated Parking Systems Using Reinforcement Learning-assisted Model Predictive Control," Ph.D. in Electrical and Computer Engineering, Department of ECE, Oakland University, 10/2025. (Publications: C38.)

[11] Ranya Badawi, "Event-triggered MPC for DC-DC Converters," Ph.D. in Electrical and Computer Engineering, Department of ECE, Oakland University, 03/2025. (Publications: J40, C22, C24; Now with General Motors.)

[12] Ali Irshayyid, "Highway Merging Control Using Multi-Agent Reinforcement Learning: Exploring Centralized and Decentralized Schemes," Ph.D. in Electrical and Computer Engineering, Department of ECE, Oakland University, 10/2024. (Publications: B3, J22, J37, C30; Continued as postdoc.)

Master Students (4 completed; 3 in progress)

[1] Krunal Mehta, M.S. in Mechatronic Systems Engineering, Department of ECE, Oakland University. (LiDAR signal processing; Started 09/2025.)

[2] Neha Bhatt, M.S. in Electrical and Computer Engineering, Department of ECE, Oakland University. (SLAM and Iterative Closest Point algorithm; Started 08/2025.)

[3] Jacob Bowden, M.S. in Mechatronics and Robotics Engineering, Department of ECE, Oakland University. (Robotic arm manipulation; Started 05/2025.)

[4] Cory Ness, "Graduate Engineering Project: Flywheel System Characterization using Extended Kalman Filter," M.S. in Embedded Systems, Department of ECE, Oakland University, Fall 2024. (Publications: C35; Now with CTR Electronics, LLC.)

[5] David Flessner, "Reinforcement Learning-Based Event-Triggered Active Battery Cell Balancing Control for Electric Vehicle Range Extension," M.S. in Mechatronic Systems Engineering, Department of ECE, Oakland University, July 2024. (Publications: J31, J42; Now with Stellantis.)

[6] Luke Nuculaj, "Simultaneous Cell State Estimation via Dense Adaptive Extended Kalman Filter," M.S. in Electrical and Computer Engineering, Department of ECE, Oakland University, March 2024. (Publications: J45, C33; Founded a startup on embedded systems and continued as Ph.D. student at OU.)

[7] Christopher Rother, "Development of a Four-Wheel Steering Scale Vehicle for Autonomous Vehicle Motion Control Evaluation," M.S. in Mechatronic Systems Engineering, Department of ECE, Oakland University, February 2023. (Publications: J27; Joined Northrop Grumman, Baltimore, MD.)

Undergraduate Students (11 completed; 2 in progress)

[1] Briana Popa, ECE and Honors College, Oakland University, 07/2025–present. (Honor thesis on Visual-based SLAM.)

[2] Keer Chen, ECE, Oakland University, 05/2025–present. (Scale vehicle development.)

[3] Yashvardhan Govind, ECE and Honor College, Michigan State University, 05/2025–08/2025. (Scale vehicle development.)

[4] Sivasakthi Muthukumar, ECE, Oakland University, 01/2024–04/2024. (Senior project on IGVC robot electrical subsystem design; joined General Motors.)

[5] George Trupiano, ECE, Oakland University, 01/2024–04/2024. (Senior project on IGVC robot electrical subsystem design.)

[6] Andrew McGhee, ECE, Oakland University, 01/2024–04/2024. (Senior project on IGVC robot electrical subsystem design.)

[7] Luis Gomez, ECE, Oakland University, 01/2024–04/2024. (Senior project on IGVC robot electrical subsystem design.)

[8] Armela Gjokaj, ECE and Honors College, Oakland University, 09/2023–12/2023. (Honor thesis vehicle parking space monitoring system.)

[9] Seeyam Chowdhury, ECE and Honors College, Oakland University, 01/2023–04/2023. (Honor thesis on medication dispensing systems.)

[10] Matthew Adams, ECE, Oakland University, 05/2022–08/2022. (Battery modeling and simulation.)

[11] Steven DeCoste, ECE and Honors College, Oakland University, 01/2022–04/2022. (Publication: C25; Senior project and honor thesis on internal combustion engine steady state detection; won the **2022 ASME ICED Undergraduate Research Competition**; joined General Motors.)

[12] Ziwei Zhou, ECE, Oakland University, 09/2021–12/2021. (Worked on electric vehicles simulation.)

[13] Shan Huang, ECE, Oakland University, 09/2020–12/2020, 05/2021–08/2021. (Publications: C20; Worked on nonlinear battery modeling and event-triggered MPC steering control; received funding from FCA [now Stellantis] PREP program to continue M.S. at OU.)

High School Students (4 completed; 1 in progress)

[1] Anandavel Sakthi, International Academy East, 06/2025–present.

[2] Sruthi Karthik, Novi High School, 06/2025–08/2025.

[3] Christopher Nixon, Rudolf Stiener High School, 06/2025–08/2025.

[4] Alice Chen, Novi High School, 06/2024–08/2024. (Accepted to University of Michigan, Carnegie Mellon, and Georgia Tech.)

[5] Aaron Sun, Troy High School, 09/2023–05/2024. (Accepted to University of Michigan.)

Ph.D. Dissertation Committee (for students that I do not serve as major advisor)

[1] Weichen Chen, Ph.D. in Mechanical Engineering, Oakland University, 2024–present. (Advisor: Dr. Yongsoon Yoon)

[2] Amirhossein Taaghi, Ph.D. in Mechanical Engineering, Oakland University, 2024–present. (Advisor: Dr. Yongsoon Yoon)

[3] Pratibha Singh, Ph.D. in Mechanical Engineering, Oakland University, 2023–present. (Advisor: Dr. Ryan Monroe)

[4] Zhi Gao, Ph.D. in Mechanical Engineering, Oakland University, 2022–present. (Advisor: Dr. Ankun Yang)

[5] Priyanka Yadav, Ph.D. in Mechanical Engineering, Oakland University, 2021–present. (Advisor: Dr. Xia Wang)

[6] Zhibang Xu, Ph.D. in Mechanical Engineering, Oakland University, 2020–present. (Advisor: Dr. Xia Wang)

[7] Hong Lee, Ph.D. in Electrical and Computer Engineering, Oakland University, 2021–2024. (Advisor: Dr. Ka Cheok)

Master Thesis Committee (for students that I do not serve as major advisor)

[1] Shiyu Yang, M.S. in Mechatronic Systems Engineering, Oakland University. (Advisor: Dr. Jia Li; Defended July 2022.)

Graduate Students Who Have Done Research Under My Supervision

[1] Owais Ogdeh, M.S. in Electrical and Computer Engineering, Department of ECE, Oakland University, 01/2025–08/2025. (Sensor-lean battery cell level state estimation. Publication: J44)

[2] Pujitha Venigandla, M.S. in Electrical and Computer Engineering, Department of ECE, Oakland University, 08/2024–11/2024. (Event-triggered MPC for path tracking.)

[3] Venkata Satya Sreenivas Agnihothram, Ph.D. student in Systems Engineering, Department of ECE, Oakland University, 08/2024–01/2025. (AV platooning.)

[4] Theodore Elle Mbeng, Ph.D. student in Electrical and Computer Engineering, Department of ECE, Oakland University, 10/2024–04/2025. (Trailer control.)

[5] Steven DeCoste, M.S. in Electrical and Computer Engineering, Department of ECE, Oakland University, 01/2023–08/2024. (Vehicle speed prediction.)

[6] Daorsa Dulaj, M.S. in Electrical and Computer Engineering, Department of ECE, Oakland University, 08/2023–12/2023. (Hybrid energy systems with wave energy.)

[7] Zhenqi Xu, M.S. in Electrical and Computer Engineering, Department of ECE, Oakland University, 09/2023–12/2023. (Battery modeling.)

[8] Yonggang Wei, M.S. in Electrical and Computer Engineering, Department of ECE, Oakland University, 09/2023–12/2023. (Gaussian process regression.)

[9] Suryakiran George, Ph.D. student in Electrical and Computer Engineering, Department of ECE, Oakland University, 09/2023–12/2023. (LiDAR for autonomous driving.)

[10] Umbreen Kanwal, Ph.D. student in Electrical and Computer Engineering, Department of ECE, Oakland University, 09/2022–12/2022. (Co-advised with Dr. Yongsoon Yoon; Controls and diagnostics of electro-hydraulic actuators.)

[11] Vidyasekhar Potluri, Ph.D. student in Electrical and Computer Engineering, Department of ECE, Oakland University, 05/2021–09/2022. (Deep learning-based road surface detection.)

[12] Zhaodong Zhou, M.S. in Mechanical Engineering, Department of ME, Oakland University, 08/2021–12/2021. (Non-thesis student conducting research on battery control; continued Ph.D. in my group.)

[13] Bing Liu, Ph.D. student in Electrical and Computer Engineering, Department of ECE, Oakland University, 01/2021–05/2021. (Generative adversarial networks for synthetic vehicle speed.)

TEACHING

Oakland University

[1] ECE 4400: Automatic Control Systems
- Summer 2025 (Enrollment: 10; Course rating: 5.0/5.0; Instructor rating: 5.0/5.0)
- Winter 2024 (Enrollment: 31; Course rating: 3.9/5.0; Instructor rating: 3.8/5.0)
- Fall 2022 (Enrollment: 16; Course rating: 4.5/5.0; Instructor rating: 4.6/5.0)
- Winter 2022 (Enrollment: 23; Course rating: 4.5/5.0; Instructor rating: 4.6/5.0)
- Fall 2021 (Enrollment: 28; Course rating: 4.5/5.0; Instructor rating: 4.5/5.0)
- Fall 2020 (Enrollment: 21; Course rating: 4.5/5.0; Instructor rating: 4.6/5.0)

[2] ECE 4640/5640 Battery Management Systems (**New course developed in Winter 2026**)
- Winter 2026 (Enrollment: 4 [2^{UG}+2^{G}]; Course rating: /5.0; Instructor rating: /5.0)

[3] ECE 4998: Senior Project
- Winter 2024 (Sivasakthi Muthukumar, George Trupiano, Andrew McGhee, Luis Gomez on IGVC robot electrical subsystem)
- Winter 2022 (Steven DeCoste on internal combustion engine steady state detection; won the 2022 ASME ICED Undergraduate Research Competition)

[4] ECE 4999: Senior Design
- Winter 2023 (Enrollment: 40; Course rating: 3.7/5.0; Instructor rating: 3.7/5.0)

[5] ECE/SYS 5402 Systems Optimization and Design
- Summer 2024 (Enrollment: 10; Course rating: N/A[1]; Instructor rating: N/A[1])

[6] ECE 5404 Linear Systems and Control[2]
- Fall 2025 (Enrollment: 8; Course rating: /5.0; Instructor rating: /5.0)

[1] Course rating and instructor rating not available for ECE/SYS5402 for Summer 2024.
[2] ECE5404 is offered as "ECE 5404 Signal and Linear Systems Analysis" for Summer 2024.

- Fall 2024 (Enrollment: 3; Course rating: 5.0/5.0; Instructor rating: 5.0/5.0)
- Summer 2024 (Enrollment: 10; Course rating: N/A[3]; Instructor rating: N/A[3])

[7] ECE/SYS 6410: Intelligent Control Systems
- Winter 2021 (Enrollment: 17; Course rating: 3.8/5.0; Instructor rating: 4.1/5.0)

[8] ECE 6450: Model Predictive Control (**New course developed in Fall 2022**)
- Winter 2025 (Enrollment: 4; Course rating: 5.0/5.0; Instructor rating: 5.0/5.0)
- Fall 2023[4] (Enrollment: 6; Course rating: 5.0/5.0; Instructor rating: 5.0/5.0)
- Fall 2022[4] (Enrollment: 7; Course rating: 4.1/5.0; Instructor rating: 4.0/5.0)

[9] ECE 6996: Graduate Engineering Project
- Fall 2025 (Krunal Mehta on LiDAR-based SLAM)
- Fall 2024 (Cory Ness on EKF-based parameter estimation for fly wheel)
- Fall 2023 (Daorsa Dulaj on hybrid energy systems with wave energy)

[10] ECE 7970: Independent Study
- Fall 2021 (Vidyasekhar Potluri on Road classification by deep learning)

Oakland University Professional and Continuing Education (PACE)

[1] CEEN 12100: Fundamentals of Battery System for EV and HEV
- Guest lecture on October 19, 2022, "Battery Management Systems and Chargers"

Iowa State University

[1] EE 324: Signals and Systems II (Lab instructor: Fall 2011)

[2] EE 442: Introduction to Circuits and Instruments (Teaching Assistant: Spring 2011)

[3] EE 576: Digital Feedback Control Systems (Teaching Assistant: Spring 2012, Spring 2013)

Technical Talks

[1] "Behavior Privacy and Formation Control in Multi-Robot Systems," Michigan State University Robotics and Control Seminars, East Lansing, MI, October 9, 2025.

[2] "Model Predictive Control for Electrified Vehicles: Thermal Management and Motion Control," Hyundai America Technical Center, Inc., Ann Arbor, MI, June 24, 2025.

[3] "AI-assisted Control for Intelligent Mobility," Department of Mechanical, Aerospace, and Biomedical Engineering, University of Tennessee, Knoxville, TN, March 24, 2025.

[4] "AI-assisted Control Systems for Electrified and Intelligent Systems," Oakland County Education-to-Business Tech Collaboration Events, Rochester, MI, February 27, 2025.

[5] "AI-assisted Control for Cell-level Estimation and Management of EV Batteries," School of Environmental, Civil, Agricultural, and Mechanical Engineering, University of Georgia, Athens, GA, February 26, 2025.

[6] "Sensor-lean Cell-level Estimation and Management of EV Batteries," Department of Mechanical Engineering, Michigan State University, East Lansing, MI, February 18, 2025.

[7] "AI-assisted Control Systems for Electrified and Intelligent Systems," Department of Electrical and Computer Engineering, University of North Carolina at Charlotte, Charlotte, NC, November 25, 2024.

[8] "Optimal Scheduling of Edge Devices for Decentralized Data Preprocessing," NSF IUCRC eCAT Center Annual Fall Meeting, Wayne State University, Detroit, MI, November 7, 2024.

[9] "Coordination of Multi-Agent Systems Through Reconfigurable MPC and Decentralized RL," Invited Talk, Wyoming Computing Symposium, Laramie, WY, September 19, 2024.

[10] "AI-assisted Control Systems for Electrified and Intelligent Systems," Distinguished Webinar, School of Electrical Engineering and Computer Science and the Center for Cyber Security/AI Research, University of North Dakota, Grand Forks, ND, September 18, 2024.

[3] Course rating and instructor rating not available for ECE5404 for Summer 2024.
[4] Offered as "ECE 6452 Optimal and Predictive Control" for Fall 2022 and Fall 2023.

[11] "Development of a Four-Wheel Steering Scale Vehicle for Research and Education on Autonomous Vehicle Motion Control," IEEE International Conference on Robotics and Automation, Yokohama, Japan, May 14, 2024.

[12] "Optimal Scheduling of Edge Devices for Decentralized Data Preprocessing," NSF IUCRC eCAT Center Annual Spring Meeting, University of North Texas, Denton, TX, May 3, 2024.

[13] "AI-assisted Embedded Control Systems for Electrified and Intelligent Systems," Department of Electrical and Computer Engineering, Wayne State University, Detroit, MI, May 8, 2023.

[14] "AI-assisted Control for Electrified and Intelligent Systems," Department of Electrical and Computer Engineering, University of Michigan-Dearborn, Dearborn, MI, February 6, 2023.

[15] "Optimal Control in Battery Management Systems," Department of Electrical and Computer Engineering, Kettering University, Flint, MI, May 12, 2022.

[16] "Inverse Reinforcement Learning-based Personalized Motion Planning and Control," NSF IUCRC on Pervasive Personalized Intelligence Planning and IAB Workshop, Oakland University, Rochester, MI, April 7, 2022.

[17] "AI-Enhanced Controls for Embedded Systems," Department of Computer Science, Southeast Missouri State University, Cape Girardeau, Missouri, February 23, 2022.

[18] "Optimal Control and Artificial Intelligence Lab," SECS Advisory Board, Oakland University, Rochester, MI, March 5, 2021.

[19] "Artificial Intelligence Enhanced Controls for Embedded Systems," CSCI 4341 Guest Lecture, Department of Computer Science, University of Texas Rio Grande Valley, Edinburg, TX, January 26, 2021. (UTRGV is a minority serving school)

[20] "Optimal Control and Artificial Intelligence Lab," ECE Advisory Board, Oakland University, Rochester, MI, January 22, 2021.

[21] "Advanced Control and Optimization in Automotive and Energy Applications," Department of Electrical and Computer Engineering, Oakland University, Rochester, MI, March 31, 2020.

[22] "Advanced Control and Optimization in Automotive and Energy Applications," Department of Mechanical Engineering, Oakland University, Rochester, MI, March 20, 2020.

[23] "Advanced Control and Optimization in Automotive and Energy Applications," University of Michigan Transportation Research Institute (UMTRI), Ann Arbor, MI, March 9, 2020.

[24] "Advanced Control in Automotive and Energy Applications," Department of Electrical and Computer Engineering, University of Michigan-Dearborn, Dearborn, MI, February 12, 2020.

[25] "Advanced Control in Automotive and Energy Applications," Department of Mechanical Engineering, University of Michigan-Dearborn, Dearborn, MI, February 11, 2020.

[26] "Diagnosis, Prognosis, and Secrecy Analysis in Stochastic Discrete Event and Hybrid Systems," Intelligent Fusion Technology, Inc, Germantown, MD, April 8, 2016.

[27] "Failure Diagnosis in Stochastic Discrete Event and Hybrid Systems," Idaho National Laboratory, Idaho Falls, ID, August 4, 2014.

[28] "Model-based Validation of Diagnostic Specification," Electrical & Controls Systems Lab, General Motors Research & Development Center, Warren, MI, July 22, 2014.

[29] "Metrics for Secrecy and Resiliency for Cyber-Physical Systems," 9th Showcase Meeting, NSF Security and Software Engineering Research Center, Washington D.C., May 20, 2014.

[30] "Detection of Requirement-Violation in Cyber-Physical Systems," GPSS Graduate and Professional Student Research Conference, Iowa State University, Ames, IA, April 4, 2014.

[31] "Failure Diagnosis in Stochastic Discrete-Event and Cyber-Physical Systems," Graduate Seminar, Department of Electrical and Computer Engineering, Iowa State University, Ames, IA, February 5, 2014.

ACADEMIC SERVICES

Journal Editorial

[1] **Associate Editor**, *ASME Journal of Dynamic Systems, Measurement, and Control*, 2025–present.

[2] **Associate Editor**, *Systems Science & Control Engineering*, 2024–present.

[3] **Associate Editor**, *International Journal of Modelling, Identification and Control*, 2023–present.

[4] **Associate Editor**, *IET Cyber-Systems and Robotics*, 2022–present.

[5] **Lead Guest Editor**, for Special Issue on "Intelligent Control Systems for Autonomous Vehicles," *Sensors*, 2023–present.

[6] **Guest Editor**, for Special Issue on "Modeling and Control of Discrete Event Systems," *Applied Sciences*, 2025–present.

[7] Associate Editor, *Energy Systems*, 2016–2024.

[8] Lead Guest Editor, for Special Issue on "Recent Advances on Learning-based Control: Theory and Application," *International Journal of Modelling, Identification and Control* (volume 43, number 3, 2023), 2021–2023.

[9] Guest Editor, for Special Issue on "Artificial Intelligence Based Autonomous Vehicles," *Sensors* (volume 21-23), 2021–2023.

[10] Guest Editor, for Special Issue on "Emerging Model-based and Data-Driven Techniques in Control, Communication and Learning," *Electronics*, 2021–2022.

[11] Guest Editor, for Special Issue on "Advanced Safety Design and Control for Electric Vehicles," *International Journal of Vehicle Design*, 2021–2022.

[12] Associate Editor, *Journal of Control and Decision*, 2016–2019.

[13] Lead Guest Editor, for Special Issue on "Advances in Control and Decision for Power and Energy Systems," *Journal of Control and Decision* (volume 5, number 2, 2018), 2016–2018.

Conference Editorial and Chair

[1] **Session Organizer and Chair**, *Modeling, Estimation, and Control Conference*, 2025–present.
- Invited session organizer and co-chair for MECC 2025 at Pittsburgh, PA, USA, for invited session "Integrating Machine Learning and Control Theory for Sustainable Transportation Solutions".

[2] **Session Organizer and Chair**, *American Control Conference*, 2025–present.
- Invited session organizer for ACC 2026 at New Orleans, LA, USA, for invited sessions "Cooperative Autonomy and Multi-Agent Control" and "Battery Systems, Estimation & Energy Management".

[3] **Associate Editor**, *IEEE International Midwest Symposium on Circuits and Systems*, 2025–present.

[4] **Associate Editor**, *American Control Conference*, 2024–present.

[5] **Associate Editor**, *Modeling, Estimation, and Control Conference*, 2024–present.

[6] Technical Program Committee Member, *IEEE International Conference on Mobility: Operations, Services, and Technologies*, 2024–present.

[7] **Associate Editor**, *IEEE Conference on Control Technology and Applications*, 2023–present.

[8] Session Chair, *IEEE International Midwest Symposium on Circuits and Systems*, Lansing, MI, 2025, for Regular Session "AI Accelerators and Edge Computing".

[9] Technical Program Committee Member, *IEEE International Conference on Machine Learning and Applications*, 2021–2024.

[10] Associate Editor, *IFAC International Symposium on Advances in Automotive Control*, 2022.

[11] Associate Editor, *Chinese Control and Decision Conference*, 2013–2024.

[12] Session Chair, *IEEE International Conference on Machine Learning and Applications*, Pasadena, CA, 2021, for Regular Session "Object Detection and Retrieval".

[13] Associate Editor, *IEEE International Conference on Robotics and Automation*, 2020.

[14] Session Chair, *American Control Conference*, Portland, OR, 2014, for Regular Session "Discrete Event Systems".

[15] Invited Session Organizer and Co-Chair, *IEEE International Conference on Networking, Sensing and Control*, Miami, FL, 2014, for Invited Session "Model-Based Developments for Embedded and Cyber-physical System".

Panel and Technical Committee

[1] Panelist, *National Science Foundation*, 2022 (ECCS), 2024 (ECCS), 2025 (CMMI and ECCS).

[2] Proposal Reviewer for Natural Sciences and Engineering Research Council of Canada (NSERC), 2024.

[3] Proposal Reviewer for National Research and Development Agency (ANID) of the Ministry of Science, Technology, Knowledge and Innovation of Chile, 2023.

[4] Technical Committee on Automotive Control, IEEE Control Systems Society, 2021–present.

[5] Technical Committee Automotive and Transportation Systems, ASME Dynamic Systems and Control Division, 2020-present.

[6] Technical Committee on Discrete-Event Systems, IEEE Control Systems Society, 2017–present.

Journal/Publisher/Conference Reviewer

- Reviewed for 90+ journals, publisher and conferences.

University Services

OU Services

[1] Disability Literacy & Awareness Committee, University Senate, Oakland University, 2023–present.

School Services

[1] Faculty Advisor, Smart Vehicle Club, SECS, Oakland University, 2023–present.
- 3rd place in Self-Drive, Intelligent Ground Vehicle Competition, 2025. (Cash award: $600).
- Sponsorship for 2025-2026: Magna International ($5,000); Dataspeed ($1,000); Isuzu Technical Center of America ($500); Quanser ($500).

[2] Project Sponsor, Senior Design, SECS, Oakland University, 2023–present.
- "Development of an X-by-wire System for Polaris Gem e2," Winter 2026.
- "Development of a Scale Autonomous Vehicle based on Ride-On Car," Fall 2025.
- "Development of a Micro Mobile Robot," Summer 2025.
- "Development of An Immersive Battery Thermal Management System," Summer 2025.
- "Development of a Battery Thermal Management System," Winter 2024. (**SECS Dean's Choice Award**)
- "Development of a Scale Autonomous Vehicle based on Ride-On Car," Winter 2024.
- "Electric Go-Kart," Summer 2023.

[3] Faculty Advisor, Electric Racing Association, SECS, Oakland University, 2023–2025.
- Sponsorship for 2023-2024: NAACPSE ($500).

[4] Faculty Advisor, Oakland Robotics Association, SECS, Oakland University, 2022–2025.
- Sponsorship for 2023-2024: Isuzu Technical Center of America ($500).

[5] Hiring Committee for SECS IT Manager, Oakland University, 2023.

[6] Ad-hoc reviewer for SECS Best Graduate Paper Award, SECS, Oakland University, November 2022.

[7] Reviewer for Michigan Association of State Universities on "New undergraduate major in Robotics, University of Michigan – Ann Arbor", SECS, Oakland University, May 2022.

Departmental Services

[1] Graduate Affairs Committee, ECE, Oakland University, 2020–present.

[2] Reappointment Review Committee, ECE, Oakland University, 2025–present.
- C1 review committee, 2025.

[3] Faculty Search Committee, ECE, Oakland University, 2024–2025.
- Assistant Professor in Power and Energy Systems, 2024.

- Assistant Professor in Mechatronics and Robotics, 2025.
- Visiting Assistant Professor in Mechatronics and Robotics, 2025.

[4] Program Modernization Committee for Electrification/Mechatronics/Robotics, ECE, Oakland University, 2022–2024.
- Led the update of M.S. in Mechatronics and Robotics program;
- Led the creation of 8 stackable graduate certificate programs within M.S. in Mechatronics and Robotics;
- Led the creation of B.S. in Mechatronics and Robotics program.