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INTERESTS	Systems and Control, Artificial Intelligence, Intelligent Vehicles, Power & Energy Systems	
EMPLOYMENT	Oakland University , Rochester, MI, USA - Associate Professor , Department of Electrical and Computer Engineering - Assistant Professor, Department of Electrical and Computer Engineering General Motors , Michigan, USA - Senior Control Systems Engineer, Vehicle and Propulsion Control, Milford - Summer Intern, Software V&V, Warren (GM R&D) Idaho National Laboratory , Idaho Falls, ID, USA - R&D Scientist, Power and Energy Systems	08/2024–present 08/2020–08/2024 01/2017–08/2020 04/2014–07/2014 11/2014–12/2016
HONORS AND RECOGNITIONS	NSF CAREER Award , National Science Foundation Best Paper Award , IEEE Transactions on Automation Science and Engineering Best Paper Award , IEEE International Conference on Electro-Information Technology IEEE Senior Member Associate Editor , American Control Conference Associate Editor , Modeling, Estimation, and Control Conference Outstanding Graduate Mentor Award , Oakland University Most Research Active Award , Oakland University New Investigator Research Excellence Award , Oakland University Most Active Grant Seeker Award , Oakland University Oakland County 40 Under 40 , Oakland County NSF CMMI Game Changer Academies (C-GCA) Panel Fellow , NSF Faculty Recognition Award for Research , Oakland University R&D 100 Award , R&D World Associate Editor , IEEE Conference on Control Technology and Applications Associate Editor , IEEE International Conference on Robotics and Automation INL Publication Achievement Award , Idaho National Laboratory INL Exceptional Contributions Program Award , Idaho National Laboratory Research Excellence Award , Iowa State University Student Travel Award , American Control Conference Third Class Scholarship for Undergraduate Student , Zhejiang University Outstanding Student , Zhejiang University	2022 2016 2023 2020 2024–present 2024–present 2025 2024 2024 2023 & 2024 2024 2024 2023 2023 2023–present 2020 2016 2015 & 2016 2014 2014 2008 2008
HONORS BY MY ADVISEES	SECS Best Graduate Paper Award (Zhaodong Zhou), Oakland University Undergraduate Research Competition Winner (Steven DeCoste), ASME ICE Division	2024 2022
SELECTED GRANTS	Total: ~\$4.8m; As lead/sole PI: ~\$1.3m; Personal share: ~\$2m [6] Jun Chen , “Sensor-lean Estimation and Monitoring for Second Life EV Batteries,” 05/2025–04/2028, NSF-ECCS-EPCN. [5] Jun Chen , “Development of a Virtual Reality Environment for Autonomous Vehicle Personalization,” 05/2025–04/2026, University Research Committee, Oakland University.	

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- [3] **Jun Chen**, “Sensor Reduction for Large Battery Packs,” 09/2024–08/2025, Michigan Translational Research and Commercialization (MTRAC) for Advanced Transportation Innovation Hub.
- [2] **Jun Chen**, “Optimal Scheduling of Edge Devices for Decentralized Data Preprocessing,” 06/2024–05/2025, NSF IUCRC eCAT Center.
- [1] **Jun Chen**, “CAREER: Reconfigurable and Predictive Control with Reinforcement Learning Supervisor for Active Battery Cell Balancing,” 01/2023–12/2027, NSF-ECCS-EPCN.

PUBLICATIONS

(h-index: 22; underline: students under my close supervision; *: corresponding author)

Patents

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- [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.
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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).
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- [42] Ranya Badawi and **Jun Chen***, “[Event-Triggered Boost Converter Model Predictive Control with Kalman Filter](#),” *Systems Science & Control Engineering*, volume 12, number 1, pages 1–15, December 2024.
- [41] Guojiang Xiong*, Jing Zhang, Xiaofan Fu, **Jun Chen** and Ali Wagdy Mohamed, “[Seasonal Short-term Photovoltaic Power Prediction Based on GSK-BiGRU-XGboost Considering Correlation of Meteorological Factors](#),” *Journal of Big Data*, volume 11, number 164, pages 1–19, November 2024.
- [40] Mingqiang Wang, Lei Zhang*, **Jun Chen**, Zhiqiang Zhang, Zhenpo Wang and Dongpu Cao, “[A Hybrid Trajectory Prediction Framework for Automated Vehicles with Attention Mechanisms](#),” *IEEE Transactions on Transportation Electrification*, volume 10, number 3, pages 6178–6194, September 2024.
- [39] Ali Irshayyid, **Jun Chen*** and Guojiang Xiong, “[A Review on Reinforcement Learning-based Highway Autonomous Vehicle Control](#),” *Green Energy and Intelligent Transportation*, volume 3, number 4, pages 1–19, August 2024.
- [38] Cong Wang, Zhenpo Wang, Lei Zhang*, **Jun Chen** and Dongpu Cao, “[Post-Impact Stability Control for Road Vehicles: State-of-the-Art Methodologies and Perspectives](#),” *IEEE Transactions on Intelligent Transportation Systems*, volume 25, number 8, pages 8295–8312, August 2024.

- [37] **Jun Chen***, Aman Behal, Zhaojian Li and Chong Li, “[Active Battery Cell Balancing by Real Time Model Predictive Control for Extending Electric Vehicle Driving Range](#),” *IEEE Transactions on Automation Science and Engineering*, volume 21, number 3, pages 4003–4015, July 2024.
- [36] Zhaodong Zhou, Christopher Rother and **Jun Chen***, “[Comparison of Two-Wheel and Four-Wheel Steering using Event-Triggered Predictive Motion Control and Scale Vehicles](#),” *ASME Letters in Dynamic Systems and Control*, volume 4, number 3, pages 1–6, July 2024.
- [35] **Jun Chen***, Lei Zhang and Weinan Gao, “[Reconfigurable Model Predictive Control for Large Scale Distributed Systems](#),” *IEEE Systems Journal*, volume 18, number 2, pages 965–976, June 2024.
- [34] Kaixiang Zhang, Kaian Chen, Zhaojian Li*, **Jun Chen** and Yang Zheng, “[Privacy-Preserving Data-Enabled Predictive Leading Cruise Control in Mixed Traffic](#),” *IEEE Transactions on Intelligent Transportation Systems*, volume 25, number 5, pages 3467–3482, May 2024.
- [33] David Flessner, **Jun Chen*** and Guojiang Xiong, “[Reinforcement Learning-based Event-Triggered Active Battery Cell Balancing Control for Electric Vehicle Range Extension](#),” *Electronics*, volume 13, number 5, pages 1–22, March 2024.
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- [31] Lei Zhang*, Qi Wang, **Jun Chen**, Zhenpo Wang and Shaohua Li, “[Brake-by-Wire System for Passenger Cars: A Review of Structure, Control, Key Technologies, and Application in X-by-Wire Chassis](#),” *eTransportation*, volume 18, number 1, pages 1–15, October 2023.
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- [16] **Jun Chen***, “Extended Kalman Filter Steady Gain Scheduling using k -means Clustering,” *International Journal of Modelling, Identification and Control*, volume 34, number 2, pages 158–162, February 2020.
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- [13] **Jun Chen**, Christoforos Keroglou, Christoforos N. Hadjicostis and Ratnesh Kumar, “Revised Test for Stochastic Diagnosability of Discrete-Event Systems,” *IEEE Transactions on Automation Science and Engineering*, volume 15, number 1, pages 404–408, January 2018.
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- [35] Cory Ness and **Jun Chen***, “Extended Kalman Filter for Flywheel Systems,” *IEEE International Conference on Electro Information Technology*, Valparaiso, IN, May 29–31, 2025.
- [34] Zhaodong Zhou, Yu Jiang and **Jun Chen***, “Exploring Optimal Pumping Strategy in Active Suspension Systems for Speed Maximization during Downhill Motion,” *12th IFAC Symposium on Intelligent Autonomous Vehicles*, Phoenix, AZ, May 7–9, 2025.
- [33] Luke Nuculaj, Adam Kidwell, Connor Homayouni, Alex Fillmore, Darrin Hanna and **Jun Chen**, “[Optimal FPGA Implementation of Dense Extended Kalman Filter for Simultaneous Cell State Estimation](#),” *IEEE International Midwest Symposium on Circuits and Systems (MWSCAS)*, Springfield, MA, August 11–14, 2024.
- [32] Muye Jia, Mingyuan Tao, Meng Xu*, Peng Zhang, Jiayi Qiu, Gerald Bergsieker and **Jun Chen**, “[RL-MPC: Reinforcement Learning Aided Model Predictive Controller for Autonomous Vehicle Lateral Control](#),” *2024 SAE World Congress*, Detroit, MI, April 16–18, 2024.
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- [30] Ali Irshayyid and **Jun Chen***, “[Highway Merging Control Using Multi-Agent Reinforcement Learning](#),” *IEEE International Conference on Computing and Machine Intelligence*, Mount Pleasant, MI, April 13–14, 2024.
- [29] Mohammad R. Hajidavalloo, **Jun Chen***, Qiu hao Hu and Zhaojian Li, “[Study on the Benefits of Integrated Battery and Cabin Thermal Management in Cold Weather Conditions](#),” *2023 American Control Conference*, San Diego, CA, May 31–June 2, 2023.
- [28] Zhaodong Zhou, **Jun Chen***, Mingyuan Tao, Peng Zhang and Meng Xu, “[Experimental Validation of Event-Triggered Model Predictive Control for Autonomous Vehicle Path Tracking](#),” *IEEE International Conference on Electro Information Technology*, Romeoville, IL, May 18–20, 2023. (**Best Paper Award:** [link](#))
- [27] Yang Chen, **Jun Chen***, Chenang Liu, Guodong Liu, Maximiliano Ferrari and Aditya Sundararajan, “[Integrated Modeling and Optimal Operation of Multi-Energy System for Coastal Community](#),” *IEEE International Conference on Electro Information Technology*, Romeoville, IL, May 18–20, 2023.
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- [25] Steven DeCoste, Antonio Scalzi, **Jun Chen*** and Dan DelVescovo*, “[Minimizing Steady-State Testing Time in an Engine Dynamometer Laboratory](#),” *2023 SAE World Congress*, Detroit, MI, April 18–20, 2023.
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- [23] Man Liang* and **Jun Chen**, “[A Conceptual Design of Barking Drones Fleet Management to Detect and Repulse Cattle](#),” *21st Asia Pacific Automotive Engineering Conference*, Melbourne, Australia, October 3–5, 2022.

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- [19] **Jun Chen***, Aman Behal and Chong Li, “[Active Cell Balancing by Model Predictive Control for Real Time Range Extension](#),” *IEEE Conference on Decision and Control*, Austin, TX, USA, December 13–15, 2021.
- [18] **Jun Chen*** and Zonggen Yi, “[Comparison of Event-Triggered Model Predictive Control for Autonomous Vehicle Path Tracking](#),” *2021 IEEE Conference on Control Technology and Applications*, San Diego, CA, August 8–11, 2021. (Invited Paper)
- [17] **Jun Chen*** and Junhui Zhao, “[Synthetic Wind Speed Scenarios Generation using Artificial Neural Networks for Probabilistic Analysis of Hybrid Energy Systems](#),” *2021 IEEE International Symposium on Industrial Electronics*, Kyoto, Japan, June 20–23, 2021.
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