

Exponent®
Engineering & Scientific Consulting

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Professional Profile

Dr. Lamantia's expertise lies within the realm of electric vehicles (EVs), advanced driver assistance systems (ADAS), and EV charging infrastructure. He has a broad experimental background in designing, integrating, and evaluating both hardware and software components for vehicle control systems, such as adaptive cruise control and electric power assisted steering (EPAS), as well as battery-integrated DC fast charging operation, providing him with a uniquely encompassing end-to-end perspective on the EV ecosystem.

Prior to joining Exponent, Dr. Lamantia received his Ph.D. from Tennessee Technological University where he performed research related to ADAS-equipped electric vehicles (EVs) and their charging infrastructure. His most prominent work was designing, developing, and demonstrating multiple second-life battery integrated mobile DC-fast EV charging stations utilizing lithium-ion battery modules from decommissioned electric vehicles. He also spearheaded the university's ADAS vehicle development, integrating sensors such as LiDAR, cameras, and radar to a pair of electric vehicles and performing systems integration and control strategies to complete a drive-by-wire framework, leading to his development of custom adaptive cruise control algorithms implemented directly on his experimental platforms.

Dr. Lamantia was also an avid member and Captain of Tennessee Tech's Baja SAE International Collegiate Design Series team while pursuing his undergraduate degree, where he led the student team for the 2019 racing season and designed and built the vehicle drivetrain for multiple years.

Academic Credentials & Professional Honors

Ph.D., Engineering, Tennessee Tech University, 2025

M.S., Mechanical Engineering, Tennessee Tech University, 2021

B.S., Mechanical Engineering, Tennessee Tech University, 2019

Prior Experience

Postdoctoral Research Associate, Tennessee Technological University, 2025-2026

Graduate Student Research Assistant, Tennessee Technological University, 2020-2025

Pre-Vital Issues Field Quality Assurance Intern, Nissan North America, May 2019-August 2019

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Professional Affiliations

Society of Automotive Engineers (SAE)

American Society of Mechanical Engineers (ASME)

Publications

Cui J, Lamantia M, Innis C, Chen P. Numerical modeling of air flow and heat transfer in an EV thermal management system. Proceedings of the ASME 2025 International Mechanical Engineering Congress and Exposition 2025.

Yang S, Su Z, Lamantia M, Chen P. Comprehensive simulation and experimental validation of sliding mode control-based spacing control for battery electric vehicles under uncertain environments. ASME Journal of Autonomous Vehicles and Systems 2025; 5(4):041001.

Lamantia M, Su Z, Chen P. Experimental study of impacts of one-pedal driving on lateral stability of electric vehicles. 2024 Modeling, Estimation and Control Conference 2024.

Su Z, Lamantia M, Chen P. Social-aware long-distance trip planner for electric vehicles using genetic algorithm. ASME Letters in Dynamic Systems and Control 2023; 3(2):021011.

Shen H, Zhou X, Ahn H, Lamantia M, Chen P, Wang J. Personalized velocity and energy prediction for electric vehicles with road features in consideration. IEEE Transactions on Transportation Electrification 2023; 9(3):3958–3969.

Shen H, Zhou X, Yu A, Lamantia M, Chen P, Wang J. An experimental comparison of physics-based and machine-learning-based electric vehicle energy consumption estimation methods. IFAC-PapersOnLine 2023; 56(2):8672–8677.

Shen H, Wang Z, Zhou X, Lamantia M, Yang K, Chen P, Wang J. Electric vehicle velocity and energy consumption predictions using transformer and Markov-chain Monte Carlo. IEEE Transactions on Transportation Electrification 2022; 8(3):3836–3847.

Shen H, Zhou X, Wang Z, Ahn H, Lamantia M, Chen P, Wang J. Electric vehicle energy consumption estimation with consideration of longitudinal slip ratio and machine-learning-based powertrain efficiency. IFAC-PapersOnLine 2022; 55(37):158–163.

Lamantia M, Su Z, Chen P. Remaining driving range estimation framework for electric vehicles in platooning applications. 2021 American Control Conference 2021.

Schafer D, Lamantia M, Chen P. Modeling and spacing control for an electric vehicle with one-pedal-driving feature. 2021 American Control Conference 2021.

Shen H, Wang Z, Yang K, Lamantia M, Chen P, Wang J. Comparison of different variable combinations for electric vehicle power prediction using kernel adaptive filter. IFAC-PapersOnLine 2021; 54(20):858–863.