Exponent®
Engineering & Scientific Consulting

Tyler L'Hotta

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Professional Profile

Tyler L'Hotta's areas of expertise include powertrain systems engineering, mechanical design, structured testing and failure analysis, computational modeling, powertrain and vehicle performance, and data acquisition. His background includes experience with mechatronic sensor integration and computer vision, using Python and C++ for controls, data acquisition, and analysis. Mr. L'Hotta's work has emphasized applied and fluid mechanics for vehicle systems, developing and validating test methods for intake and exhaust performance, building calibrated rigs, and corroborating physical measurements with simulation. His background includes pressure-differential techniques, airflow characterization, and acoustic–resonance strategies for managing tonal content and vibration. Representative efforts include a volumetric flow bench for intake characterization validated against Ansys simulations. Across projects, he focuses on traceable procedures, reproducible methods, and clear linkages from experiment to design decisions.

Prior to joining Exponent, Mr. L'Hotta served as an officer of Buffs Racing Inc. and Director of Powertrain Engineering, guiding a 150-plus member Formula SAE program through full-vehicle design, manufacturing, and validation using DVP&R and FMEA; he coordinated cross-functional development and test to closure. He also collaborated with Sierra Space on a capture-net launcher for resident-space-object mitigation by contributing to circuit design, tolerance analysis, and root-cause resolution using test-engineer data.

Academic Credentials & Professional Honors

M.S., Mechanical Engineering, University of Colorado, Boulder, 2025

B.S., Mechanical Engineering, University of Colorado, Boulder, 2024

Esteemed Scholars- Hale Award Recipient 2020-2024

Prior Experience

Regional Sales Manager, Skyline Products, 06/2025-09/2025

Course Assistant, University of Colorado Boulder, 01/2025-05/2025

Officer, Buffs Racing Inc, 05/2024 – 09/2025

Director, Powertrain Engineering, Buffs Racing Inc, 12/2022-05/2024

Powertrain Engineer, Buffs Racing Inc, 05/2021-12/2022

Welder’s Apprentice, HQS Metals 10/2014-01/2019

Professional Affiliations

Society of Automotive Engineers SAE, Member

Publications

Presentations

L’Hotta T, Aljadani T, Alturkistani M. Dune Industries Interceptor Debut. Product Debut, Chicago Auto Show “Overlanding Chicago”, Chicago, IL, 2025.

Project Experience

Designed and validated a volumetric flow bench to characterize intake airflow; the rig combined calibrated sensors, pressure-differential methods, and Ansys Fluent to align physical measurements with simulation results.

Conducted a comparative study of Helmholtz cavities versus quarter-wave J-pipes for targeted attenuation of 60–180 Hz exhaust orders, developing FFT-based analysis and visualizations to quantify frequency-selective performance and phase-related attenuation.

Collaborated with Sierra Space to develop a space debris collection device. Validated the design using data provided by the test engineer, applying core principles from component design. Identified and resolved design errors through circuit design, tolerance analysis, and root cause analysis.

Designed a fully autonomous robotic companion using machine learning, trained to understand American Sign Language (ASL) through software implementation tools such as OpenCV, C++, and Python, enabling it to respond to both audio and visual commands.

Additional Education & Training

Ford ACE Certified Technician, 2020