Exponent®
Engineering & Scientific Consulting

Steve Como, Ph.D., P.E.

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Professional Profile

Dr. Como brings a unique perspective to his clients, having both expertise in accident reconstruction and emerging transportation technology. He has more than five years of experience analyzing complex crash scenarios and conducting vehicle testing ranging from passenger and commercial vehicles, to e-bikes and e-scooters, to evaluating performance of advanced driver assistance systems (ADAS). In recent years, Dr. Como has developed expertise in automated vehicles (AVs) and other emerging automotive technologies through completing his PhD in systems engineering with a dissertation focused on evaluating safety for AVs. Additionally, he brings professional experience to his clients through working in the AV industry. This combination of accident reconstruction and industry experience provides a holistic viewpoint for crashes involving ADAS technology and offers valuable insight for AV safety evaluations and guidance.

In the course of his research and industry experience, Dr. Como has engaged with the AV community through standards working groups and has contributed to SAE International information reports and recommended practices with a focus on AV safety. Additionally, he has participated in the Automated Vehicle Safety Consortium (AVSC) development of best practices with industry partners. Dr. Como has published numerous conference papers and journal articles on the topic of AV safety evaluation and has been heavily involved in the research and development of metrics to evaluate safety performance. Published research includes simulated scenarios evaluated through the use of traditional and novel metrics, physical testing of scenarios leveraging instrumented infrastructure, and techniques for measuring vehicle dynamics across various sensor modalities incorporating a computer vision pipeline.

During his time at Exponent, Dr. Como has conducted testing to evaluate the performance of ADAS technology under different conditions and a variety of scenarios. He also has experience conducting testing with the Global Soft Target (GST) for repeatable testing of complex maneuvers. Additional test experience involves full-scale crash testing, e-scooter and e-bike handling and crash testing, and vehicle sled testing. This test experience is expressed in numerous publications demonstrating novel test methodologies and documenting vehicle responses as contributions to industry research.

In addition to his testing experience, Dr. Como has extensive experience reconstructing complex accidents. This experience includes rollover crashes, high and low speed crashes, sideswipes, multi-vehicle and pedestrian collisions. In addition to field experience, Dr. Como has received formal training in the download and analysis of event data recorder (EDR) data, HVE simulation for modeling vehicle dynamics and collision physics, and the Northwestern accident reconstruction course. Dr. Como also has substantial experience documenting accident scenes with the use of laser scanners and drones in addition to light- and heavy-duty vehicle inspections.

Academic Credentials & Professional Honors

Ph.D., Systems Engineering, Arizona State University, 2022

M.S., Mechanical Engineering, Worcester Polytechnic Institute, 2016

B.S., Mechanical Engineering, Worcester Polytechnic Institute, 2015

2020 Trevor O. Jones Outstanding Paper Award, SAE International

Licenses and Certifications

Professional Engineer Mechanical, Arizona, #67410

Prior Experience

Automated Vehicle Senior Safety Engineer, Motional, 2023-2024

Senior Engineer, Exponent, 2017-2023

Mechanical Engineer, General Dynamics Electric Boat, 2015-2017

Product Development Engineer Intern, Metso Automation, 2012-2015

Professional Affiliations

SAE International – On-Road Automated Driving (ORAD) Task Force

IEEE

Publications

2023. S. Como, J. Wishart, M. Elli, and N. Kidambi, “Evaluating Automated Vehicle Scenario Navigation using the Operational Safety Assessment (OSA) Methodology,” SAE WCX Conference, Paper 2023-01-0797, Detroit, USA.

2022. S. Como, “Operational Safety Assessment Methodology Framework: An Approach to Quantifying Automated Vehicle Safety,” Doctoral Dissertation, Arizona State University, ProQuest Dissertation and Theses Database.

2022. S. Como, M. Paradiso, I. Campbell, C. Garman, S. Werner, J. Wishart, “Crash Test Methodology for Electric Scooters with Anthropomorphic Test Device (ATD) Riders,” SAE WCX Conference, Paper 2022-01-0853, Detroit, USA.

2022. S. Como, J. Wishart, M. Elli, and N. Kidambi, “Evaluating the Severity of Safety Envelope Violations in the Proposed Operational Safety Assessment (OSA) Methodology for Automated Vehicles,” SAE WCX Conference, Paper 2022-01-0819, Detroit, USA.

2022. N. Kidambi, J. Wishart, M. Elli, and S. Como, “Sensitivity of Automated Vehicle Operational Safety Assessment (OSA) Metrics to Measurement and Parameter Uncertainty,” SAE WCX Conference, Paper 2022-01-0815, Detroit, USA.

2022. J. Wishart, Y. Chen, S. Como, N. Kidambi, D. Lu, Y. Yang, “Fundamentals of Connected and Automated Vehicles,” SAE International, Warrendale, USA.

2021. D. Lu, V. Jammula, S. Como, J. Wishart, Y. Chen, and Y. Yang, “CAROM – Vehicle Localization and Traffic Scene Reconstruction from Monocular Cameras on Road Infrastructures,” International Conference on Robotics and Automation, Xi’an, China.

2021. N. Altekar, S. Como, D. Lu, J. Wishart, D. Bruyere, F. Saleem, and L. Head, “Infrastructure-Based Sensor Data Capture Systems for Measurement of Operational Safety Assessment (OSA) Metrics,” SAE WCX Conference, Paper 2021-01-0175, Detroit, USA.

2021. M. Elli, J. Wishart, S. Como, S. Dhakshinamoorthy, and J. Weast, “Evaluation of Operational Safety Assessment (OSA) Metrics for Automated Vehicles in Simulation,” SAE WCX Conference, Paper 2021-01-0868, Detroit, USA.

2020. J. Wishart, S. Como, M. Elli, B. Russo, N. Altekar, and J. Weast, “Driving Safety Performance Assessment Metrics for ADS-Equipped Vehicles,” SAE WCX Conference, Paper 2020-01-1206, Detroit, USA.

2020. J. Wishart, S. Como, M. Elli, B. Russo, J. Weast, N. Altekar, E. James, and Y. Chen, “Driving safety performance assessment metrics for ADS-equipped vehicles,” Accepted for publication in SAE International Journal of Advances and Current Practices in Mobility.

2020. J. Wishart, S. Como, U. Forgione, J. Weast, L. Weston, A. Smart, G. Nicols, and Ramesh S., “Literature Review of Verification & Validation Activities of Automated Driving Systems,” Accepted for publication in SAE International Journal of Connected and Automated Vehicles.

2020. C. Garman, S. Como, I. Campbell, J. Wishart, K. O’Brien, S. Maclean, “Rider Kinematics and Vehicle Dynamics of E-Scooters”, SAE WCX Conference, Paper 2020-01-0935, Detroit, USA.

2019. C. Crosby, J. Skiera, C. Bare, S. Como, et al., “Passenger Vehicle Response and Damage Characteristics of Front and Rear Structures during Low- to Moderate-Speed Impacts,” SAE WCX Conference, Paper 2019-01-0415, Detroit, USA.

Additional Education & Training

Crash Data Retrieval Specialist Course, Collision Safety Institute, April, 2022

HVE Forum, Las Vegas, NV, March, 2019

Northwestern University Traffic Crash Reconstruction, July, 2018

Traffic Collision Technology Webinar, Laser Technology Inc, May, 2018

HVE Forum, Charleston, SC, February, 2018