

Joel C. Wilson, Ph.D., P.E.
Senior Engineer

Professional Profile

Dr. Joel C. Wilson is a Senior Engineer in Exponent's Vehicle Engineering practice. Dr. Wilson specializes in reconstruction of motor vehicle accidents and has developed an expertise in the analysis of off-road vehicle crashes. He also performs truck inspections, ECM and electronic crash module downloads, and has experience with bicycle frame analysis. Additionally, he has considerable experience in general mechanical design and development. Dr. Wilson's Ph.D. research focused on the design and testing of head-mounted displays (HMD) for improved efficiency, situation awareness, and safety in urban/industrial firefighting. He has conducted human subjects way-finding experiments with firefighters, which showed the potential navigation efficacy benefit of his HMD.

Prior to joining Exponent, Dr. Wilson served as a Postdoctoral Scholar in the Mechanical Engineering Department at the University of California at Berkeley.

Academic Credentials and Professional Honors

Ph.D., Mechanical Engineering Design, University of California, Berkeley, 2007
M.S., Mechanical Engineering, University of California, Berkeley, 2004
B.S., Mechanical Engineering, University of Colorado, Boulder, 2001

Licenses and Certifications

Registered Professional Mechanical Engineer, Arizona, #M35666

Specialized Training

Traffic Accident Reconstruction Course, Northwestern University Center for Public Safety.

Certified Bosch Crash Data Retrieval System Technician and Data Analyst, Collision Safety Institute.

Publications

Schwall M, Wilson J, Mattison D. Post-impact examination of HID headlamps. 2010 Society of Automotive Engineers (SAE) World Congress, SAE Paper No. 2010-01-0056.

Wilson J, Wright P. Head-mounted display efficacy study to aid first responder indoor navigation. Proceedings, IMechE, Part C: Journal of Mechanical Engineering Science 2009; 223(C3):675–688.

Wilson J, Wright P. Design of monocular head-mounted displays, with a case study on firefighting. Proceedings, IMechE, Part C: Journal of Mechanical Engineering Science 2007; 221(12):1729–1743.

Wilson J, Bhargava V, Redfern A, Wright P. A wireless sensor network and incident command system for urban firefighting. Proceedings, IEEE, Mobiquitous, Philadelphia, PA, 2007.

Wilson J, et al. Design of monocular head-mounted displays for increased indoor firefighting safety and efficiency. Proceedings, SPIE, Helmet- and Head-Mounted Displays X: Technologies and Applications, Vol. 5800, pp. 103–114, 2005.

Steingart D, Wilson J, Redfern A, Wright P. Augmented cognition for fire emergency response: An iterative user study. Proceedings, HCI International Conference, Augmented Cognition, 2005.

Professional Affiliations

Tau Beta Pi