

Emmanuel (Noel) Jay F. Manuel

Senior Consultant



Emmanuel (Noel) Jay F. Manuel is a Senior Consultant with ESI in the Aurora, Illinois, office. Mr. Manuel has a Bachelor of Science in Mechanical Engineering from the University of Texas at San Antonio.

His principal areas of professional activity include accident investigation, documentation and reconstruction, vehicle dynamics, low- and high-speed vehicle impact analysis, vehicle dynamic simulation, event data recorder analysis, automotive research, videogrammetry, instrumentation, and testing.

Vehicles involved include passenger, commercial, rail, agricultural, and recreational. Videos analyzed range from surveillance-style static cameras to dashcam-style moving cameras.

Education

BS, Mechanical Engineering. University of Texas at San Antonio
- 2014

Certifications

- The Accreditation Commission for Traffic Accident Reconstruction – ACTAR
 - Traffic Accident Reconstructionist
Registration Number 5096 – Expires 11/3/2030
- eRailSafe Certification
- FARO Focus 3D Operator

Positions Held

Engineering Systems Inc., Aurora, Illinois

- Senior Consultant, 2024 – present
 - Team Lead 11/2025 – present
- Senior Staff Consultant, 2019–2023
- Staff Consultant, 2015–2019

Contact Information

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ESi Aurora

4215 Campus Drive
Aurora, IL 60504

Areas of Specialization

- Accident Investigation & Reconstruction
- Engineering Dynamics & Testing
- Low- & High-Speed Vehicle Impact Analysis
- Vehicle Dynamics Simulation
- Videogrammetry
- Automotive & Mechanical Design

J. Eftekhar & Associates, San Antonio, Texas

- Staff Engineer, 2012–2015

Imagine Lifestyles, San Antonio, Texas

- Driving Instructor, 2015

LensCrafters, San Antonio, Texas

- Lead Technician, 2007–2014

RKG Enterprises, Inc., San Antonio, Texas

- Electronics Technician/Fabrication, 2010–2011

Boeing, Universal City, Texas

- Intern, 2003
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Continuing Education

- **Introduction to Brake Control Systems: ABS, TCS, and ESC** – SAE International, 2025
- **Hyundai-Kia & Tesla EDR Tools Technician** – University of North Florida Institute for Police Technology and Management (IPTM), 2025
- **Passenger Restraint Safety Systems** – University of North Florida Institute for Police Technology and Management (IPTM), 2025
- **The Fundamentals of Automotive All-Wheel Drive System** – SAE International, 2025
- **Driver Distraction from Electronic Devices: Insights and Implications** – SAE International, 2024
- **Event Data Recorder Update and Analysis** – Ruth Consulting, 2023
- **Accessing and Interpreting Heavy Vehicle Event Data Recorders** – SAE International, 2023
- **Traffic Signal Timing Records Interpretation and Analysis** – University of Tennessee Knoxville, Center for Transportation Research, 2020
- **Managing Fall Protection** – Construction Safety Council, 2020
- **Traffic Crash Reconstruction for the Forensic Engineer** – Northwestern University Center for Public Safety, 2019
- **Forklift Operator Safety Training** – S.A.F.E. Aurora, IL 2019
- **Applied Vehicle Dynamics** – Autobahn Country Club, 2018
- **Human Factors in Traffic Crash Reconstruction** – IPTM, University of North Florida, 2017
- **Air and Foundation Brake Training** – Bendix Spicer Foundation Brake LLC, Universal Technical Institute, 2017

- **Vehicle Crash Reconstruction Methods** – SAE International, 2016
 - **Crash Data Retrieval (CDR), Data Analyst** – Northwestern University, 2016
 - **Advanced Human Vehicle Environment (HVE)** – Engineering Dynamic Corporation HVE Forum, 2015
 - **Advanced Collision Investigation** – Texas A&M Engineering Extension Service, 2014
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Professional Affiliations/Honors

Society of Automotive Engineers

- Officer of Student and Young Professional Outreach, Chicago Section

American Society of Mechanical Engineers

Illinois Association of Technical Accident Investigators

University of Texas at San Antonio

- 1st Place, Mechanical Engineering Departmental Awards, 2014
 - 2nd Place, Center for Innovation and Technology Entrepreneurship 100K Competition, 2014
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Project Experience

Accident Investigation and Reconstruction

- Premises, pedestrian, horse & buggy, bicycle, recreation vehicle, scooter, motorcycle, car, truck, commercial vehicle, train and special vehicles power by gas, diesel, hybrid or electric.
- Applying videos from body worn, surveillance and vehicle cameras.
- Event Data Recorder applications.

Vehicle Dynamics and Testing

- Instrumented vehicles to quantify dynamics
 - when undergoing evasive maneuvers at varying speeds or in staged collisions.
 - at low and high speeds.
- Quasistatic testing of vehicle components to determine the force required to replicate damage in low closing speed accidents.
- ADAS system and component evaluations

Videogrammetry and Visualization

- Using 3D scanning technology, reconstructed object locations, dimensions, dynamics, relative movements, and available space. Global applications.

Fluids Testing and Material Identification

- Evaluated automotive fluids for identification and evidence of mixing that could lead to failure of components.
- Evaluated material transfer for identification to confirm or refute hypothesis of source.

Publications

“Addition of Tire Forces into Low-Speed Bumper-to-Bumper Crash Reconstruction Simulation Models,” R.M. Brach, J. Stegemann, **E.J. Manuel**, and N. Civitanova, SAE Technical Paper 2024-01-2479, 2024.

“Vehicle Accident Reconstruction During a Pandemic,” **E.J. Manuel**, The Journal of the DuPage County Bar Association Brief, Vol. 3, No. 3, pp. 12–15, November 2020.

“Appointment of Liability in Autonomous Vehicle Accidents,” D.D. Fitzpatrick, W.G. Aimonette, C.A. Beverly, W.C. Dickinson, P.J. McGuire, S. Ritchie, H.M. Sterling, R.A. Stern, M.D. Stewart, J.M. Weck, E.M. Kay, and **E.J. Manuel**, Clausen Miller P.C. Whitepaper, October 2020.

“Sensitivity Analysis of Various Vehicle Dynamic Simulation Software Packages Using Design of Experiments (DOE),” R.M. Brach, S. Capser, **E.J. Manuel**, J. Rogers, and R. Bailey, SAE Paper 2020-01-0639, 2020.

“Videogrammetry in Vehicle Crash Reconstruction with a Moving Video Camera,” **E.J. Manuel**, R.A. Mink, and D.H. Kruger, SAE Technical Paper 2018-01-0532, April 2018.

Presentations

“Exploring ADAS Fundamentals in Claims and Litigation”, **E. J. Manuel** and A. Awale, ESI Aurora Science Fair and Continuing Education, Aurora, IL, November 2025.

“Event Data Recorders in Passenger Vehicles,” **E.J. Manuel**, Wisconsin Defense Counsel Spring Conference Continuing Education, Wisconsin Dells, WI, August 2025.

“Event Data Recorders in Passenger Vehicles,” **E.J. Manuel**, Illinois Association of Defense Trial Counsel Continuing Education, Aurora, IL, August 2024.

“Identification of Mixed-In Service Automotive Fluids Inside a Continuously Variable Transmission (CVT) and Differentials,” **E.J. Manuel**, International Materials Applications and Technologies (IMAT) American Society of Metals International (ASM) 109th Annual Society Meeting, New Orleans, LA, September 15, 2022.

“Low-Speed Vehicle Collision Analysis,” **E.J. Manuel** and A.C. Mathias, Illinois Association of Defense Trial Counsel Continuing Education, Chicago, IL, November 2018.

“Videogrammetry in Vehicle Crash Reconstruction with a Moving Video Camera,” **E.J. Manuel**, SAE World Congress, Detroit, MI, April 11, 2018.

“Event Data Recorders in Passenger Vehicles,” **E.J. Manuel**, Illinois Association of Defense Trial Counsel Continuing Education, Aurora, IL, November 2016.