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. The vehicles involved range from passenger, commercial, agricultural, rail, and recreation. The videos analyzed range from surveillance style static cameras to dashcam style moving cameras.

Education

- B.S., Mechanical Engineer, University of Texas, San Antonio, TX

Positions Held

Engineering Systems Inc., Aurora, Illinois

- Senior Consultant – 2024 - present
- Senior Staff Consultant – 2019 - 2023
- Staff Consultant – 2015 – 2019

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

- Internship - 2003

Publications

“Addition of Tire Forces into Low-Speed Bumper-to-Bumper Crash Reconstruction Simulation Models”,

R. Matthew Brach, Jacob Stegemann, Emmanuel (Noel) Jay F. Manuel, and Nicholas Civitanova, SAE Technical Paper 2024-01-2479, SAE International, Warrendale, PA, 2024.

Emmanuel (Noel) Jay F. Manuel
Senior Consultant

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Areas of Specialization

Low and High-Speed Vehicle Impact Analysis

Vehicle Dynamics and Testing

Vehicle Dynamics Simulation

Accident Investigation / Reconstruction

Videogrammetry

Automotive and Mechanical Design

"Vehicle Accident Reconstruction During a Pandemic",

Emmanuel (Noel) Jay F. Manuel, Article, The Journal of the DuPage County Bar Association Brief, Vol 3, Issue 3, November 2020.

"Appointment of Liability in Autonomous Vehicle Accidents",

Dennis D. Fitzpatrick, W. Gregory Aimonette, Colleen A. Beverly, William C. Dickinson, Patrick J. McGuire, Scott Ritchie, Hillard M. Sterling, Robert A. Stern, Meredith D. Stewart, James M. Weck, Edward M. Kay and Invited contributor Emmanuel (Noel) Jay F. Manuel, White Paper, Clausen Miller P.C. October 2020.

"Sensitivity Analysis of Various Vehicle Dynamic Simulation Software Packages Using Design of Experiments (DOE)",

R. Matthew Brach, Shawn Capser, Emmanuel Jay Manuel, Joshua Rogers, Robert Bailey, Paper 2020-01-0639, SAE International, Warrendale, PA, 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

"Identification of Mixed-In Service Automotive Fluids Inside a Continuously Variable Transmission (CVT) and Differentials",

Emmanuel (Noel) Jay F. Manuel, Presenter, 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, Co-Presenter, 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, Presenter, SAE World Congress 2018, Detroit, MI, April 11, 2018

"Event Data Recorders in Passenger Vehicles",

E.J. Manuel, Presenter Illinois Association of Defense Trial Counsel Continuing Education, Aurora, IL, November 2016 and August 2024.

Continuing Education

- **Driver Distraction from Electronic Devices: Insights and Implications** - SAE International, December 2024
- **Event Data Recorder Update and Analysis** - Ruth Consulting, September 2023
- **Accessing and Interpreting Heavy Vehicle Event Data Recorders** - SAE International, June 2023
- **eRailSafe Certified** - February 2024 - 2026

- **Traffic Signal Timing Records Interpretation and Analysis** - University of Tennessee Knoxville, Center for Transportation Research October 2020
- **Managing Fall Protection** - Construction Safety Council, October 2020
- **Traffic Crash Reconstruction for the Forensic Engineer** - Northwestern University Center for Public Safety, Ann Arbor, MI, March 2019
- **Forklift Operator Safety Training and Certification** - S.A.F.E. Aurora, IL, January 2019
- **Applied Vehicle Dynamics** - Autobahn Country Club, Joliet, IL, October 2018
- **FARO Focus 3D Operator** - Ann Arbor, MI, April 2018
- **Human Factors in Traffic Crash Reconstruction** - IPTM, University of North Florida, November 2017
- **Air and Foundation Brake Training** - Bendix Spicer Foundation Brake LLC, Universal Technical Institute, June 2017
- **Vehicle Crash Reconstruction Methods** - SAE International, May 2016
- **Crash Data Retrieval (CDR) -** Data Analyst Northwestern University, October 2016
- **Advanced Human Vehicle Environment (HVE)** - Engineering Dynamic Corporation HVE Forum, March 2015
- **Advanced Collision Investigation** - Texas A&M Engineering Extension Service, August 2014

Professional Affiliations/Honors/Acknowledgements

- **Society of Automotive Engineers (SAE)** - SAE Chicago Section Officer of Student and Young Professional Outreach
- **American Society of Mechanical Engineers (ASME)**
- **Illinois Association of Technical Accident Investigators (IATAI)**
- **Acknowledged in Vehicle Accident Analysis and Reconstruction Methods,** Third Edition. SAE Textbook. R. Matthew Brach, Raymond M. Brach, James J. Mason.
- **2014 University of Texas at San Antonio College of Engineering Technology Symposium**
    - 1st Place in the Mechanical Engineering Departmental Awards, capstone senior design project
    - 2nd Place in Center for Innovation and Technology Entrepreneurship (CITE) 100K competition

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 Crash Testing

- Instrumented vehicles to quantify dynamics
    - when undergoing evasive maneuvers at varying speeds.
    - at low and high-speed impacts.

- Quasistatic testing of vehicle components to determine the force required to replicate damage in low-speed accidents.

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.