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Daniel Fittanto, P.E.

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Professional Profile

Mr. Fittanto has 30 years of professional experience in the investigation, analysis, and reconstruction of vehicle accidents involving heavy trucks, passenger cars, motorcycles, bicycles, off-highway equipment, and pedestrians. He has specialized training and extensive experience in the analysis of commercial motor vehicle (CMV) incidents.

Mr. Fittanto's education, training, and experience include technical accident investigation and reconstruction, vehicle dynamics, heavy duty truck dynamics and systems, heavy truck brake inspections, cargo securement, 3-D vehicle dynamics and collision simulation programs, truck electronic control module (ECM) and automobile event data recorder (EDR) data extraction and analysis, full-scale testing involving cars and heavy trucks, and photogrammetry. His research and publications include full-scale crash tests between tractor-trailers and cars, calculating speeds for vehicles in yaw, heavy truck rollover, truck brake heating, and the application of vehicle dynamics computer simulations to car and truck handling analyses.

Academic Credentials & Professional Honors

M.S., Mechanical Engineering, Arizona State University, 1999

B.S., General Engineering, University of Illinois, Urbana-Champaign, 1993

Professional Affiliations

Society of Automotive Engineers, Associate Member—SAE

National Association of Professional Accident Reconstruction Specialists—NAPARS

Publications

Fittanto D, Rodowicz KA. A comparison of 3D model dynamic simulation results with low-speed crash test data. SAE Technical Paper 2012-01-0601, 2012.

Fittanto D, Bare C, Smith J, Mkandawire C. Passenger vehicle response to low-speed impacts involving a tractor-semitrailer. SAE 2011 World Congress & Exhibition, 2011 01 0291, Detroit, MI, April 12 14, 2011.

Rodowicz KA, Dupont K, Smedley J, Raasch C, Mkandawire C, Fittanto D, Bare C, Smith J. Passenger vehicle occupant response to low-speed impacts with a tractor-semitrailer. SAE 2011 World Congress & Exhibition, 2011 01 0291, Detroit, MI, April 12 14, 2011.

Fittanto DA, Metz LD, Inendino LV, Senalik CA. Evaluation of the SIMON Tractor-Semitrailer model for steady state and transient handling. SAE 2006-01-3479, 2006.

Fittanto DA, Ruhl RA, Ruhl RL, Southcombe EJ, Inendino LV. Comparison of established heavy brake heating/cooling models with HVE brake designer in a real mountain accident. SAE 2006-01-3556, 2006.

Ruhl RL, Inendino LV, Ruhl RA, Southcombe EJ, Fittanto DA. Usable models for free and forced cooling of commercial vehicle drum brakes. SAE 2006-01-3557, 2006.

Fittanto DA, Inendino LV. Tractor-semitrailer handling analysis using EDVDS and EDVTS. WP 2006-2, 2006 HVE Forum, Phoenix, AZ, February 20-24, 2006.

Ruhl RA, Ruhl RL, Fittanto DA. A comparison of EDSMAC and EDSMAC4 collision models. European Conference for Accident Reconstruction, Wildhaus, Switzerland, June 24-25, 2005.

Fittanto DA, Ruhl RL, Ruhl RA. An overview of the DyMesh method for three dimensional vehicle collision analysis. European Conference for Accident Reconstruction, Wildhaus, Switzerland, June 24-25, 2005.

Fittanto DA, Senalik CA. SIMON and EDVDS validation study: Steady state and transient handling. WP 2005-3, 2005 HVE Forum, Coconut Grove, FL, February 21-25, 2005.

Fittanto DA, Senalik CA. Passenger vehicle steady-state directional stability analysis utilizing EDVSM and Simon. WP 2004-3, 2004 HVE Forum, San Francisco, CA, May 3-7, 2004.

Ruhl RL, Fittanto DA, Strauss MG. Full scale testing of Class 8 tractor/livestock trailer. European Conference for Accident Reconstruction, Neumuenster, Germany, May 31-June 1, 2002.

Fittanto DA. Yaw stability of single versus tandem axle tractors. WP 2002-1, 2002 HVE Forum, New Orleans, LA, May 13-17, 2002.

Fittanto DA, Ruhl RA, Southcombe EJ, Burg H, Burg J. Overview of CARAT-4, a multi-body simulation and collision modeling program. SAE Paper 2002-01-1566.

Fittanto DA, Puig-Suari J. Utilizing a genetic algorithm to optimize vehicle simulation trajectories: Determining initial velocity of a vehicle in yaw. SAE Paper 2000-01-1616.

Fittanto DA, Ruhl RL, Strauss MG. Dynamics and roll stability of a loaded Class 8 tractor-livestock semi-trailer: An EDVDS application. WP 2000-4, 2000 HVE Forum, San Diego, CA, May 8-12, 2000.

Clark BA, Ruhl RL, Strauss MG, Mahal T, Fittanto DA. Dynamics and roll stability of a loaded Class 8 Tractor-Livestock Semi-Trailer. SAE Paper 1999-01-3732. (Also published in Roll Stability Dynamics, Ride and Handling, SP-1486).

Presentations

Fittanto DA. Evaluation of the SIMON Tractor-Semitrailer Model for steady state and transient handling. SAE Paper 2006-01-3479, presented at the 2006 SAE Commercial Vehicle Engineering Congress, Rosemont, IL, October 31-November 2, 2006.

Ruhl RA, Fittanto DA, Ruhl RA. A comparison of EDSMAC and EDSMAC4 collision models. Presented at the European Conference for Accident Reconstruction, Wildhaus, Switzerland, June 24-25, 2005.

Fittanto DA, Ruhl RL, Ruhl RA. An overview of the DyMesh method for three dimensional vehicle collision analysis. Presented at the European Conference for Accident Reconstruction, Wildhaus, Switzerland, June 24-25, 2005.

Fittanto DA. SIMON and EDVDS validation study: Steady state and transient handling. White Paper 2005-3, presented at the 2005 HVE Forum, Coconut Grove, FL, February 21-25, 2005.

Fittanto DA. Passenger vehicle steady-state directional stability analysis utilizing EDVSM and SIMON. White Paper 2004-3, presented at the 2004 HVE Forum, San Francisco, CA, May 3-7, 2004.

Ruhl RL, Fittanto DA. Survey of energy methods used in the United States: Crush and Delta-V. Presented at the European Conference for Accident Reconstruction, Wildhaus, Switzerland, July 4-5, 2003.

Fittanto DA. Full scale testing of Class 8 tractor/livestock trailer. Presented at the European Conference for Accident Reconstruction, Neumuenster, Germany, May 31-June 1, 2002.

Fittanto DA. Yaw stability of single versus tandem axle tractors. White Paper 2002-1, presented at the 2002 HVE Forum, New Orleans, LA, May 13-17, 2002.

Fittanto, DA, Ruhl, RA, Balasa, JA. Validation of Carat: A kinetics based accident reconstruction program. Presented at SAE World Congress 2001, Detroit, MI, March 6, 2001.

Fittanto DA. Utilizing a genetic algorithm to optimize vehicle simulation trajectories: Determining initial velocity of a vehicle in yaw. SAE Paper 2000-01-1616, presented at the 2000 SAE Automotive Dynamics and Stability Conference, Troy, MI, May 15-17, 2000.

Fittanto DA. Dynamics and roll stability of a loaded Class 8 tractor-livestock semi-trailer: An EDVDS application. White Paper 2000-4, presented at the 2000 HVE Forum, San Diego, CA, May 8-12, 2000.

Fittanto, DA, Mahal, T. Dynamics and roll stability of a loaded Class 8 tractor-livestock semi-trailer. SAE Paper 1999-01-3732, presented at the 1999 SAE International Truck and Bus Meeting and Exposition, Detroit, MI, November 15-17, 1999.

Invited Lectures

Vehicle accident reconstruction, CE 395 Engineering Forensics, Northwestern University, Evanston, IL, Spring Quarter 2010.

Vehicle accident reconstruction, CE 395 Engineering Forensics, Northwestern University, Evanston, IL, Spring Quarter 2008.

Student Team Project Advisor, GE 343 Project Design II, University of Illinois, Urbana-Champaign, Spring Semester 2001.

Additional Education & Training

HVE Forum, 2022

Introduction to Brake Control Systems, ABS, TCS, and ESC, Society of Automotive Engineers, March 27, 2019

Accessing and Interpreting Heavy Vehicle Event Data Recorders, Society of Automotive Engineers, Charlotte, NC, May 17-20, 2016.

HVE Forum, Scottsdale, AZ, February 21-25, 2011.

Bosch Crash Data Retrieval (CDR) System Technician and Analyst Course, Chicago, IL, August 18-22, 2008.

Bendix Air Brake Training, Chicago, IL, June 6-8, 2007.

HVE Forum, Phoenix, AZ, February 20-24, 2006.

TruckSim Training, Mechanical Simulation Corporation, Ann Arbor, MI, November 8, 2005.

PhotoModeler Pro 5 Collision Investigation training course, Champaign, IL, July 8-9, 2005.

Passenger Vehicle Crash Testing (intersection collisions), European Conference for Accident Reconstruction, sponsored by DEKRA, EVU, Winterthur, DSD, IbB Expertisen, DWG, USI, SJTB, Unfallanalyse Berlin at the Winterthur facilities in Wildhaus, Switzerland, June 24-25, 2005.

HVE Forum, Coconut Grove, FL, February 21-25, 2005.

HVE Forum, San Francisco, CA, May 3-7, 2004.

Vetronix Crash Data Retrieval (CDR) System Operator Course, Chicago, IL, January 28-30, 2004.

Mechanics of Heavy Duty Truck Systems, University of Michigan's College of Engineering, Ann Arbor, MI, July 14-18, 2003.

PC-CRASH and PC-RECT Workshop, Las Vegas, NV, March 10-11, 2003.

Commercial Vehicle Crash Testing, European Conference for Accident Reconstruction, sponsored by DEKRA, EVU, Winterthur, DSD, IbB Expertisen, DWG, USI, SJTB, Unfallanalyse Berlin, at the DEKRA facilities in Neumunster, Germany, May 31-June 1, 2002.

CARAT 4 Training, IbB Expertisen, Phoenix, AZ, April 20-21, 2002.

HVE Forum, New Orleans, LA, May 13-17, 2002.

OSHA 10-Hour Construction Safety and Health Course, Champaign, IL, December 2001.

Forensic mapping using a pulsed laser total station and data collector, TOPCON America Corp., Champaign, IL, September 2001.

EDC Theoretical and Applied Vehicle Dynamics Workshop, Phoenix, AZ, January 29-31, 2001.

CARAT 4 Training, IbB Expertisen, Bernkastel-Kues, Germany, October 2000.

HVE Forum, San Diego, CA, May 8-12, 2000.

3 Day High Performance Driving School, Bob Bondurant School of High Performance Driving, Phoenix, AZ. June 6-8, 1996.

Traffic Accident Reconstruction I, Northwestern University, Evanston, IL, January 1994.

Accident Investigation II, Northwestern University, Evanston, IL, October 1993.