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## **EDUCATION**

1985 Doctor of Philosophy in Engineering, Clemson University  
1981 Master of Engineering in Mechanical Engineering, Clemson University  
1978 Bachelor of Science in Mechanical Engineering, Tennessee Tech University

## **REGISTRATION**

2004 to 2024 Professional Engineer, Alabama, #26337

## **CONSULTING EXPERIENCE**

2012 to 2024 3 Axis Engineering, Tuscaloosa, AL  
Mechanical Engineer (full-time)  
2002 to 2011 Doughty & Powers Engineering, Tuscaloosa, AL  
Mechanical Engineer (part-time consultant)  
Conducted motor vehicle (passenger and commercial vehicles, motorcycles) accident reconstructions, including accident scene measurement, vehicle inspection and on-board electronic data downloading, as well as other general mechanical engineering/product investigations.

## **ACADEMIC EXPERIENCE**

1985 to 2011 The University of Alabama, College of Engineering  
Associate Professor of Mechanical Engineering, 1991  
Assistant Professor of Mechanical Engineering, 1985  
1981 to 1985 Clemson University, College of Engineering  
Visiting Instructor, Department of Mechanical Engineering, 1983  
Graduate Teaching Assistant, Department of Mechanical Engineering, 1981

## **INDUSTRIAL EXPERIENCE**

1987 to 2002 CCSports Associates, New Haven, CT  
Technical Consultant.  
Designed and developed microcontroller based system for a low-cost graphics video overlay system ("The Coach's Pad") used by professional, college, and high school athletic coaching staffs.  
1978 to 1981 Badische Corporation, Anderson SC (now Fibers Division of BASF)  
Mechanical Engineer, Research and Development Department.  
Designed, installed, and tested components for a state-of-the-art, highly automated process for the manufacture of nylon carpet yarn

**SUMMER EXPERIENCE**

- NASA-ASEE Summer Faculty Fellowship, Marshall Space Flight Center, Huntsville, AL
- 1993 Developed simulation model and debugged control system for a brushless DC motor controller for propellant control valve application.
- 1986 & 1987 Developed computer vision software for the Mechanics of Granular Materials Experiment.

**PROFESSIONAL DEVELOPMENT COURSES TAKEN**

- 2023 Motorcycle Collision Reconstruction - Independent Study, Lightpoint Learning, Jan. 26 – Feb. 3.
- 2021 Pedestrian/Bicycle Crash Investigation - Level 1 (Online), Institute of Police Technology and Management (IPTM), Sept. 5 – Oct. 5.
- 2019 EDC Simulations, Engineering Dynamics Corp., Miami, FL, Nov. 4-8.
- 2017 Human Factors in Traffic Crashes: Pelham AL, Nov. 13-17.
- 2015 HVE Forum (EDSMAC4, SIMON), Engineering Dynamics Corp., Austin, TX, Mar 2-6.
- 2013 Advanced Crash Reconstruction Utilizing Human Factors, Northwestern University Center for Public Safety, Evanston, IL, May 20-24.
- 2012 Crash Data Retrieval Analysis Course with Advanced Analysis Using the Bosch Crash Data Retrieval System, CDR Trainers, Hattiesburg, MS, Dec. 4-7.
- 2011 Accessing and Interpreting Heavy Vehicle Event Data Recorders, SAE International, Chatlotte, NC, May 17-20.
- 2009 Investigation of Motorcycle Crashes, Institute of Police Technology and Management (IPTM), Tampa, FL, Aug. 10-14.
- 2008 CDR (Crash Data Retrieval) Data Analyst Certification, Collision Safety Institute, New Orleans, LA, June 24-27.
- 2008 Human Factors In Traffic Crash Reconstruction, Institute of Police Technology and Management (IPTM), Jacksonville, FL, June 9-13.
- 2007 Motorcycle Safety Foundation Rider Course, University of Montevallo, Montevallo, AL, Nov. 2-4.
- 2007 Highway Event Data Recorder Symposium: 2007 Update, SAE International, Ashburn, VA, Sept. 5-6.
- 2007 Commercial Vehicle Braking Systems e-Seminar, SAE International, June-July.
- 2006 Caterpillar – Electronic Technician for On-Highway Trucks Customer Class Thompson Tractor Co., Birmingham, AL, Aug. 9.
- 2006 HVE Forum (SIMON), Engineering Dynamics Corp., Phoenix, AZ, Feb. 20-22.
- 2006 EDC Reconstruction, Engineering Dynamics Corp., Northside, CA, Jan. 16-20.
- 2003 Air Brake Systems Product School, Bendix, Elyria, OH, Nov. 3-6.
- 2003 Vehicle Dynamics for Passenger Cars and Light Trucks, SAE International, Troy, MI, Sept. 17-19.
- 2003 Police Traffic Accident Investigation 19 Update, Crash Data Retrieval Training and Crash Data Retrieval Update Training, Michigan State University Highway Traffic Safety Program, Mar. 10-12.
- 2002 Collision Reconstruction, Texas Engineering Extension Service, Plano TX, July 22-Aug. 2.

## **PROFESSIONAL DEVELOPMENT COURSES & SEMINARS TAUGHT**

- 2019 - 10/21 Crash Data Specialists Crash Data Retrieval (CDR) System Operators Course,  
2019 - 9/6 Montgomery Police Department, Montgomery, AL (with J. Hunter).  
2016 - 5/25  
2015 Accident Reconstruction - Your Questions Answered, The Bootcamp for  
Litigating an Automobile Accident Case, The University of Alabama School of  
Law, Tuscaloosa, AL, Sept. 25.  
2015 Traffic Accident Reconstruction - What Happened?, Alabama Criminal Defense  
Lawyers Association. DUI/Traffic Homicide Seminar, Montgomery, AL, Aug. 7.  
2015 Accident Investigation - What You Can Do to Help Determine What  
Happened?, Second Annual Transportation Safety Summit, Chattanooga, TN,  
May 14.  
2013 Protecting EDR Information, ABA Tort Trial & Insurance Practice Section,  
TIPS Fall Leadership Meeting, Minneapolis, MN, Oct. 9.  
2012 On Scene Accident Investigation – What You Need to Document, 13th Annual  
Conference Public Employees Safety Council of Alabama, Clanton, AL,  
Nov. 14 (with J. Hunter)  
2012 Heavy Vehicle Event Data Recorders - HVEDR, Ontario Provincial Police,  
Toronto, ON, Mar. 19-22 (with A. Powers).

## **ACADEMIC COURSES TAUGHT**

- AEM 264 Dynamics  
GES 131/132 Foundations of Engineering I & II  
ME 110 Intro to Mechanical Engineering  
ME 349 Numerical Methods  
ME 360 Instrumentation & Control Comp.  
ME 363 Dynamics of Machinery  
ME 372 Dynamic Systems  
ME 460 Advanced Instrumentation  
ME 464 Mechanization of Automation  
ME 465/565 Introduction to Automated Manufacturing Systems  
ME 467 Robotics and Control Hardware  
ME 475 Control Systems Analysis  
ME 489/490 Mechanical Engineering Design I & II  
ME 491/591 Vehicle Dynamics  
ME 577 Advanced Linear Control

## **PATENTS**

- 4,783,107 Method and Apparatus for Controlling Impact Force During Rapid Robotic  
Acquisition of Object, November 8, 1988 (with Frank W. Paul).  
4,715,773 Method and Apparatus for Repositioning a Mislocated Object with a Robot  
Hand, December 29, 1987 (with Frank W. Paul).

## **PROFESSIONAL AND HONOR SOCIETIES**

- Society of Automotive Engineers  
Pi Tau Sigma and Tau Beta Pi (honorary engineering societies)