SCHAEFER ENGINEERING, Inc.
A Professional Engineering Company

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Professional Resume
of
Mitchell Lee Rackers, P. E.

April 2026

I. General Information

Mechanical Engineer
Schaefer Engineering, Inc.
Wentzville, Missouri

II. Professional Summary

A. Education: Bachelor of Science, Magna Cum Laude – 1993
Mechanical Engineering
University of Missouri – Rolla
Rolla, Missouri

B. Experience:

April 2009 to Present
Position: Mechanical Engineer
Schaefer Engineering, Inc.
Wentzville, Missouri

Responsible for mechanical engineering projects which include vehicular accident reconstruction, product failure analysis and mechanical design analysis. Investigated more than 300 vehicular accidents. Provided expert testimony regarding accident reconstruction for either the plaintiff or defendant in more than 20 depositions and 2 trials.

October 2000 to March 2009
Position: President/CEO
New Design Solutions, Inc.
Rolla, Missouri

Provided Computer-Aided-Design (CAD) and Computer-Aided-Engineering (CAE) services to clients in the automotive industry. Designed and developed as-cast and machined structural chassis and suspension components. Worked with OEM automotive engineers and tier two suppliers serving as a lead design/engineering interface. Assisted clients with evaluation of supplier technical capability with site visits to domestic and off-shore (China) supplier facilities.

Experience (continued):

November 1998 to September 2000
Position: Senior Design Engineer
Caterpillar, Inc.
Mining & Construction Equipment Division
Decatur, Illinois

Lead structural engineer for the Caterpillar 24H Motorgrader. Responsibilities included identifying root cause for several premature field failures and interfacing with production personnel to resolve manufacturing related issues. Structural redesign of the blade positioning assembly requiring the development of a unique analytical linkage model to better predict failures found in the field.

November 1994 to November 1998
Position: Product Development Engineer
Intermet Corporation (Formerly Wagner Casting Company)
Decatur, Illinois

Conceptual design and optimization of cast iron components utilizing Computer-Aided-Design (CAD) and Finite Element Analysis (FEA). Served as the primary engineering interface throughout the product development phase. Directed component level testing and submission of the Design Validation Plan and Report (DVP&R) for a number of safety critical components.

June 1993 to October 1994
Position: Mechanical Engineer
Black & Veatch
Overland Park, Kansas

Performed thermal analysis and economic evaluations for coal fired, combined cycle and nuclear power plants. Assisted in the development of propriety software used to calculate the performance of low pressure steam turbines used in nuclear power plants. Contributed technical information used in the Black & Veatch text book *Power Plant Engineering*.

January 1992 to August 1992
Position: Co-operative Training Engineer
General Electric Aircraft Engines
Cincinnati, Ohio

Analyzed stress and vibration and recommended design improvements utilizing FEA on a developmental low emission gas turbine combustor.

III. Professional Registration

Registered Professional Engineer in the States of Missouri, Arkansas, Kansas and Illinois.
Certified Fire and Explosion Investigator (CFEI), Certified Vehicle Fire Investigator (CVFI), National Association of Fire Investigators.

IV. Awards, Publications and Patents

Co-author, SAE Paper # 00M-19 {March 2000}, "Austemper Ductile Iron Casting for Chassis Applications"

"Best in class" Casting Award, 2003 AFS Casting Congress, Mustang Cobra Independent Rear Suspension Upper Control Arms.

Chapter Contributor, Chapter 13 "Cycle Performance Impact", *Power Plant Engineering* by Black & Veatch

Rackers, et al.; *Anchoring sleeve assembly and method of use;* United States Patent 7708124; May 4, 2010

Influence of Taillight Width on the Ability to Recognize Closing Speed, Closing Distance, and Closing versus Separating; Jeffrey W. Muttart, Swaroop Dinakar, Jeffrey Suway, Michael Kuzel, Suntasy Gernhard, Mitch Rackers, Thomas Schaefer, Thomas Vadnais, Jaime Fischer

V. Professional Affiliations

Society of Automotive Engineers (SAE)
American Society of Mechanical Engineers (ASME)
Tau Beta Pi - National Engineering Honor Society
Pi Tau Sigma - International Mechanical Engineering Honor Society
National Association of Fire Investigators (NAFI)

VI. Courses Taught

An Introduction to Geometric Dimensioning and Tolerance (GD&T), 2001
Guest Lecturer -- ME261 (Mechanical Engineering Senior Design), University of Missouri-Rolla
Gas and Gas Appliance Investigations-
- Will Cook Grundy Fire Investigation Taskforce, February 2017
- IAAI Arkansas Chapter, April 2017

Gas Distribution Systems and Appliances (Explosion Seminar)
- 29th Annual Conference Central Illinois Fire Investigators Association, February 2020

VII. Technical Skills

Extensive experience with the following design-related processes and software.

Computer-Aided Design (CAD):
CATIA V5 (Ford Education and Training), Pro/Engineer Basic Design (Caterpillar), C3P (I-DEAS) Part Modeling & FEA for CAE (Fairlane Training and Development Center)

Technical Skills (continued):

Computer-Aided Engineering (CAE):
NEiNastran

Engineering Analysis & Technologies:
Design Validation Plan & Report (DVP&R), Failure Mode and Effect Analysis (FMEA-Ford Fairlane Training and Development Center), Geometric Dimensioning & Tolerancing (GD&T-Society of Manufacturing Engineers), Statistical Problem Solving & Product Development Risk Reduction (Shainin Consultants), Competitive Analysis and Benchmarking (CAB-Ford) , Product and Value Benchmarking (Ford), Machining of Ferrous Castings (Cast Metals Institute), Ductile Iron processes and applications (Ductile Iron Workshop- Cast Metals Institute), Castings and Forgings (Caterpillar Training Institute), Professional Liability, Lost Foam Applications

VIII. Driver License

Missouri Class "A" Commercial Vehicle Driver License (CDL)

IX. Continuing Education

2009 - Technical Writing Workshop for Engineers, HalfMoon LLC
2009 - Cognitive Interviewing for Victims and Witnesses, Missouri IAAI 2009 Annual Training Conference
2009 - NFPA 921 Fire Origin and Cause Determination, Missouri IAAI 2009 Annual Training Conference
2009 - Basic Principals of Fire Investigation, Oklahoma State University
2009 - Understanding Post-flashover Fire Behavior, Arkansas IAAI Seminar
2009 - Investigating Solid Fuel-Burning Appliance Fires, Western Michigan University
2009 - Investigation of Gas and Electric Appliance Fires, Western Michigan University
2009 - Advanced Diagramming and Animation with Total Station, Visual Statement
2010 - SAE International Congress, SAE, Detroit, MI
2010 - Vehicle Accident Reconstruction Methods Seminar, SAE – Detroit, Michigan
2010 - Vehicle Accident Reconstruction Methods Seminar, SAE – Detroit, Michigan
2010 - Truck Driving School (preparation for CDL), Nu-Way Truck Driving School, St. Louis, MO
2010 - National Crash Analysis Conference, National Crash Analysis Center, GWU, Ashburn, VA
2011 - Event Data Recorder Use in Traffic Crash Reconstruction, Institute of Police Technology and Management, University of North Florida
2011 - SAE International Congress, SAE, Detroit, MI
2011 - Heavy Vehicle Crash Reconstruction, Northwestern University, Evanston, IL
2011 - Accessing and Interpreting Heavy Vehicle Event Data Recorders, SAE, Detroit, MI
2011 - SAE 2011 Highway Vehicle Event Data Recorder Symposium, SAE, Detroit, MI
2011 - GPS Technology For Use In Vehicle Accident Reconstruction, Web Seminar
2012 - SAE International Congress, SAE, Detroit, MI
2012 - Advanced Crash Reconstruction Utilizing Human Factors Research, Northwestern University, Evanston, IL

Continuing Education (continued):

2012 - ARC-CSI Crash Conference, ARC-CSI, Las Vegas, NV
2012 - Arkansas Trucking Seminar, Springdale, AR
2012 - HAZWOPER – 40 hour HAZWOPER Certification, Safety Helpers, Colorado Spring, CO
2013 - CDR Summit, Houston TX
2013 - SAE International Congress, SAE, Detroit, MI
2013 - Advanced Computer Diagramming and Animation for Incident Reconstruction, Virtual Training, ARAS 360
2013 - Personal Productivity and Customer Relationship Management, T&T Training, Wentzville, MO
2013 - 16 Hour Asbestos Operation & Maintenance Training, Environmental Safety Training Center, St. Louis, MO
2013 - OSHA HAZWOPER 8 Hour Refresher Course, Environmental Safety Training Center, St. Louis, MO
2014 - Elevator and Escalator Combo Course
Introduction to Elevators and Escalators
How to Perform Elevator Inspections Using ASME A17.2
ASME, Las Vegas, MO
2014 - 4 Hour Asbestos Operation & Maintenance Refresher Training, Environmental Safety Training Center, St. Louis, MO
2015 - 8 Hour HAZWOPER Refresher, Environmental Safety Training Center, St. Louis, MO
2015 - SAE International Congress, SAE, Detroit, MI
2015 - Reconstruction and Analysis of Motorcycle Crashes Seminar, SAE – Detroit, Michigan
2016 - 4 Hour Asbestos Operation & Maintenance Refresher Training, Environmental Safety Training Center, St. Louis, MO
2016 - Interactive Drive Response Research (I.DRR) User Forum, Crash Safety Solutions, LLC, San Diego, CA
2017 - Interactive Drive Response Research (I.DRR) User Forum, Crash Safety Solutions, LLC, Nashville, TN
2017 - 2017 National Fire Investigation Training Program - Main Program NAFI, Eastern Kentucky University Lexington, KY
2017 - 4 Hour Asbestos Operation & Maintenance Refresher Training, Environmental Safety Training Center, St. Louis, MO
2017 - Faro Scanner and Scene Forensics Certified Training, Faro / Bobby Jones Associates, Inc., Wentzville, MO
2017 - 2017 National Fire Investigation Training Program - Certified Vehicle Fire Investigator (CVFI) -NAFI, Eastern Kentucky University Lexington, KY
2018 - 4 Hour Asbestos Operation & Maintenance Refresher Training, Environmental Safety Training Center, Wentzville, MO
2019 - Aerial Lift Operator Training, Safety Training Resources, St. Charles, MO
2019 - SAE Heavy Vehicle Event Data Recorder Training, SAE, Detroit, MI
2019 - 4 Hour Asbestos Operation & Maintenance Refresher Training, STC Safety University, Collinsville, IL

Continuing Education (continued):

2020 - CIFIA Conference, Peoria, IL
2020 - Arkansas Trucking Seminar Virtual 2020
2021 - 4 Hour Asbestos Operation & Maintenance Refresher Training, Wentzville, MO
2021 - Human Factors for Traffic Crash Reconstruction, Virtual Training, Crash Safety Solutions, LLC.
2023 - IDRR 2023 Forum, Driver Research Institute, Atlanta, GA
2025 - 2025 Response User Forum (Human Factors), Driver Research Institute