

Dr. Athan investigates incidents pertaining to product performance with an emphasis on software behavior. His decades of work experience have spanned automotive, aerospace and power generation. He also has substantial governmental regulatory experience.

Dr. Athan's experiences with control systems and software development enable him to evaluate the role software played in an incident. One important aspect of software performance is the computer interface that humans use to interact with the software. Dr. Athan can analyze how the software can affect product safety and robustness.

Dr. Athan's experiences in design optimization, dynamic system simulation, and test methods, (design of experiments, engineering statistics, and data analysis) are directly applicable to product development programs.

Licenses & Certifications

- State of Michigan P.E. License No. 6201037641

Positions Held

Engineering Systems Inc., Ann Arbor, Michigan

- Senior Consultant, 2013 – Present

General Motors Powertrain, Milford, Michigan

- Engine controls Algorithm Developer (contract), 2009 – 2013

U.S. Department of Energy, Washington, D. C.

- Evaluator of Manufacturing Technologies Applicants for Economic Reinvestment Act of 2009 (Stimulus funding), (contract), November 2009 to February 2010

Rolls Royce Fuel Cell Systems, North Canton, Ohio

- Power Plant Controls Developer (contract), 2008 – 2009

American Society of Mechanical Engineers, Washington, D.C.

- Federal Fellow assigned to the Science and Technology Committee of the U.S. House of Representatives, 2007

Ford Motor Company, Dearborn, Michigan

- Vehicle Dynamics Simulation Development (contract), 2006

Applied Dynamics International, Ann Arbor, Michigan

- Applications Engineer, 1997 – 2006

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Education

PhD, Mechanical Engineering.
University of Michigan. 1994

MS, Mechanical Engineering.
University of California at Berkeley.
1984

BS, Mechanical Engineering.
University of California at Berkeley.
1983

BA, Economics. Brown University.
1976

Areas of Specialization

Controls Software

Software Reliability

Design Optimization

Dynamic System Simulation

General Motors Corporation Legal Staff, Milford, Michigan

- Consultant, Control Systems Failure Analysis, 2000 – 2001

General Motors Powertrain, Ypsilanti, Michigan

- Senior Project Engineer, Transmission Engineering, 1996 – 1997

General Motors Corporation, Brake and Bearing Systems Center, Milford, Michigan

- Senior Project Engineer, 1988 – 1996
- Project Engineer, 1986 – 1988
- Associate Engineer, 1985 – 1986

Publications

Software Failure: Different Than Hardware Failure

T.W. Athan, Western Loss Association, Oakbrook, IL, July 2015

Flight Plan Improvements Ahead

T.W. Athan, PE Magazine, November 2007

Multicriteria Optimization of Anti-lock Braking system Control Algorithms

T.W. Athan, P.Y. Papalambros, Engineering Optimization, Vol. 27, No. 3, (1996), pp. 199-227

A Note on Weighted Criteria Methods for Compromise Solution in Multi-Objective Optimization

T.W. Athan, P.Y. Papalambros, Engineering Optimization, Vol. 25, (1995). pp. 65-81

Presentations

Multicriteria Optimization of Anti-lock Braking System Algorithms

F.A. Lootsma, T.W. Athan, and P.Y. Papalambros, presented at the XIIth International Conference on Multiple Criteria Decision Making Refereed Proceeding, (1995)

Patents

Intake Temperature Control Systems and Methods for Intake Manifold Protection

Jerry Song, Gregory York, Jon C. Wasberg, Josef C. Correia, and Timothy W. Athan, Patent 2014/0372,009, Issued December 18, 2014

Torque Limiting Engine Lubrication Protection System

Jeffrey M. Kaiser, Christopher E. Whitney, Timothy W. Athan, Dennis A. Light, and Timothy L. Gibbs, Patent 8602001, Issued December 10, 2013

Professional Affiliations/Honors

American Society of Mechanical Engineers (ASME)

- Member
- Federal Fellow, 2007

General Motors

- Ph.D. Fellowship, full salary during full-time Ph.D. studies, 1990-1994

U.C. Berkeley

- James Marshall Wells Memorial Fellowship, 1983

U.C. Santa Barbara

- President's Undergraduate Fellowship, 1982
- Moller Scholarship, 1982

Class of Eighteen Seventy-Three

- First Prize for economics essay, 1976

National Merit

- Semi-finalist, 1972