

# Timothy W. Athan

PhD, PE

Senior Consultant



Dr. Athan investigates incidents pertaining to product performance with an emphasis on software behavior. His decades of experience span automotive, aerospace, and power generation, and he 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 (e.g., design of experiments, engineering statistics, and data analysis) are directly applicable to product development programs.

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## Education

PhD, Mechanical Engineering. University of Michigan. 1994

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

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

BA, Economics. Brown University. 1976

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## Licenses & Certifications

- State of Michigan P.E. License 6201037641

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## Positions Held

### Engineering Systems Inc., Ann Arbor, Michigan

- Senior Consultant, 2013 – Present

### General Motors Powertrain, Milford, Michigan

- Engine Controls Algorithm Developer, 2009–2013

## Contact Information

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## ESi Ann Arbor

1174 Oak Valley Drive  
Ann Arbor, MI 48108

## Areas of Specialization

- Controls Software
- Software Reliability
- Design Optimization
- Dynamic System Simulation

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

- Evaluator of Manufacturing Technologies Applicants for Economic Reinvestment Act, 2009–2010

**Rolls Royce Fuel Cell Systems, North Canton, Ohio**

- Power Plant Controls Developer, 2008–2009

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

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

**Ford Motor Company, Dearborn, Michigan**

- Vehicle Dynamics Simulation Development, 2006

**Applied Dynamics International, Ann Arbor, Michigan**

- Applications Engineer, 1997–2006

**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

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**Professional Affiliations/Honors**

**American Society of Mechanical Engineers**

- Member, 1997–Present
- Federal Fellow, 2007

**General Motors**

- PhD Fellow, 1990–1994

**University of California, Berkeley**

- Recipient, James Marshall Wells Memorial Fellowship, 1983

**University of California, Santa Barbara**

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

### **Class of Eighteen Seventy-Three**

- First Prize Winner, Economics Essay, 1976

### **National Merit Scholarship**

- Semi-finalist, 1972

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### **Publications**

“Software Failure: Different Than Hardware Failure,” **T.W. Athan**, Western Loss Association, 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** and P.Y. Papalambros, Engineering Optimization, Vol. 27, No. 3, pp. 199–227, 1996.

“A Note on Weighted Criteria Methods for Compromise Solution in Multi-Objective Optimization,” **T.W. Athan** and P.Y. Papalambros, Engineering Optimization, Vol. 25, pp. 65–81, 1995.

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### **Presentations**

“Multicriteria Optimization of Anti-Lock Braking System Algorithms,” F.A. Lootsma, **T.W. Athan**, and P.Y. Papalambros, XII International Conference on Multiple Criteria Decision-Making Refereed Proceeding, Hagen, Germany, 1995.