

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, Milord, 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

**Timothy W. Athan**  
Senior Consultant

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### ESi – Ann Arbor

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Ann Arbor, MI 48108

### 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