

# NATHAN MURPHY

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- EDUCATION**     **University of Michigan, Ann Arbor**     **B.S.E., Mechanical Engineering 1996**  
*Focus: mechanical systems design and analysis, thermodynamics*
- PROFESSIONAL EXPERIENCE**     **IAV Inc.**, Ann Arbor, Mich. — *Chief Engineer, Gasoline Emissions and Performance* (2004-present)  
Technical lead in all gasoline engine development and calibration projects at US office  
Technical support of sales and marketing for gasoline engine development business  
Technical lead for facilities expansion planning  
Lead developer for company-wide technical training with regard to gasoline engines and controls  
Mentor to new employees
- IAV Inc.**, Ann Arbor, Mich. — *Senior Engineer* (2003 - present)  
Technical lead engineer for complete engine management system development and implementation  
Technical lead on various engine controls development projects  
Project manager on various engine development projects
- Robert BOSCH Corporation**, Farmington Hills, Mich. — *Assistant Project Leader* (2002 - 2003)  
Technical lead on engine controls development projects for production engines
- Robert BOSCH Corporation**, Farmington Hills, Mich. — *Calibration Engineer* (2001 - 2003)  
Technical specialist on engine controls development projects
- LOTUS Engineering, Inc.**, Ann Arbor, Mich. — *Calibration Engineer* (2000 - 2001)  
Technical specialist on engine controls development projects  
Process and test environment development  
Testing and engineering analysis
- Cosworth Technology, Inc.**, Neckarsulm, Germany / Novi, Mich. — *Calibration Engineer* (1999 – 2000)  
Technical Specialist for engine controls development  
Customer liaison for overseas projects
- Cosworth Technology, Inc.**, Dearborn, Mich. — *Project Engineer* (1998)  
Technical specialist in problem resolution and root-cause analysis  
Mechanical technician for all project work
- Johann A. Krause, Inc.**, Auburn Hills, Mich. — *Project Engineer* (1997-1998)  
Technical lead for engine assembly line automation  
Project leader for assembly line projects  
Company liaison for overseas project coordination
- Johann A. Krause Maschinenfabrik GmbH**, Bremen, Germany — *Engineering Trainee* (1996 - 1997)  
12-month training program under Thyssen Maschinenbau AG  
Mechanical draftsman (drafting boards, German DIN-ISO drafting standards)  
Mechanical draftsman (AutoCAD and HP ME10 software)  
Automation assembly technician
- Oak Ridge National Laboratory, Applied Systems Technology Section** — *Research Assistant* (1993)  
Research assistant and programmer for automotive research department

**PUBLICATIONS**    Engine Torque Mapping Using Computer-Aided Calibration. The Proceedings of the 2005 SAE Congress S. Al-Assadi, J. Breitinger, N. Murphy. Paper 2005-01-0055, Publication SP-1975.

Tuning an Electronic Throttle Controller Using Computer-Aided Calibration Methods. The Proceedings of the 2006 SAE Congress. S. Al-Assadi, J. Breitinger, N. Murphy. Paper 2006-01-0307, Publication SP-2028.

Model-Based Friction and Limp-Home Compensation In Electronic Throttle Control Systems. The Proceedings of the 2006 SAE Congress. S. Al-Assadi, J. Breitinger, N. Murphy. Paper 2006-01-0857, Publication SP-2003.

**PRESENTATIONS**    “Turbo-charging Spark-Ignition Engines”. IAV Inc. Automotive Engineering. Internal Training, October 2004.

                  “Internal Combustion Engine Basics”. IAV Inc. Automotive Engineering. Internal Training, November 2005.

                  “Gasoline Engine Emissions”. IAV Inc. Automotive Engineering. December 2005.

                  “Gasoline Engine Control Basics”. IAV Inc. Automotive Engineering. February, 2006.

                  “Gasoline Calibration Fundamentals”. IAV Inc. Automotive Engineering. Internal Training, April, 2006.

                  “Telescope Optics I: Optical Jargon”. The University Lowbrow Astronomers. Monthly meeting, December 16, 2005.

                  “Telescope Optics II: Refractors, or How To Tell a Fraunhofer from a Nagler-Petzval”. The University Lowbrow Astronomers. Monthly meeting, January 20, 2006.

                  “Telescope Optics III: Reflectors, or How to Tell a Dall-Kirkham from a Ritchey-Chretien”. The University Lowbrow Astronomers. Monthly meeting, March 17, 2006.

**SKILLS**                Modern electronic engine controls and calibration  
                  Conversational written and spoken German, with technical vocabulary  
                  AutoCAD  
                  Basic ZEMAX layout  
                  Basic optical testing and evaluation (star-testing)  
                  Basic HTML, Microsoft Office, Windows and DOS applications  
                  Working knowledge of refractive and reflective optical systems

**PROFESSIONAL  
ACTIVITIES**        Society of Automotive Engineers (SAE) — Member since 1998  
                  American Society of Mechanical Engineers (ASME) — Student Section President 96; Member 1993-2001  
                  The Epeians: The Univ. of Mich. Engineering Leadership Honor Society — 1996  
                  Pursuing PE Certification, passed the FE Examination April 1996

**INTERESTS**        Vice President, University Lowbrow Astronomers, Ann Arbor, Mich.  
                  Member, Observatory Committee, University Lowbrow Astronomers  
                  Music performance and composition (the STRANGE – <http://strangemusic.net>)  
                  Vintage sports car restoration and racing: 1960 MGA, 1985 Mercedes-Benz 190E 2.3-16