TIMOTHY OVERLY

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CAREER OBJECTIVE:

To find a development or research position that utilizes my strong applied engineering aptitude and analytical skills in creative ways to develop new products

SPIDAWeb LLC   **Columbus, Ohio**
Lead Developer: Analysis Engineering and Software Development   *August 2007 to Present*
- Managing a team responsible for the development, maintenance and support of the company's software products
- Designed and programmed multicomponent service-oriented web applications using the Grails framework.
- Wrapped external web services into common interfaces for a modular design
- Implemented continuous integration testing, code review and feature development cycles to support a more robust development process
- Tuned databases with more than five million entries for sub-second response times
- Specified and implemented a server-based license system in Ruby on Rails
- Wrote a finite element analysis package to determine loading and stresses in utility pole structures
- Programmed a graphical user interface in Java for the building, viewing and editing of utility pole structures

Los Alamos National Laboratory   **Los Alamos, New Mexico**
Graduate Research Assistant: Engineering Institute   *May 2006 – July 2007*
- Designed, built and tested small electronic devices for use in structural health monitoring applications
- Programmed in MATLAB and C to control external hardware for data acquisition and analysis
- Developed a sensor diagnostic algorithm for use with piezoelectric sensor/actuators and implemented it in software

Los Alamos National Laboratory   **Los Alamos, New Mexico**
Engineering Intern: Dynamics Summer School   *June 2005 – August 2005*
- Worked as part of a multidisciplinary team to implement an algorithm that used natural frequencies to detect damage in a structure
- Correlated test results to a theoretical model for plant identification and controller implementation

Robert Bosch GmbH   **Stuttgart, Germany**
Praktikant: Central Research and Development Center   *April 2001 – September 2001*
- Programmed a climate chamber measurement system using Visual Basic to improve data collection and decrease measurement time by eighty percent
- Developed a test protocol and programmed measurement systems to qualify new magnetic anti-lock brake sensors
- Designed and constructed fixtures for testing existing products within magnetic fields

EDUCATION:

University of Cincinnati   **Cincinnati, Ohio**
Department of Mechanical, Industrial and Nuclear Engineering

M.S. in Mechanical Engineering - June 2007   *B.S. in Mechanical Engineering - June 2002*
- Structural Dynamics/Advanced Vibrations
- Finite Element Techniques
- GPA: 3.7/4.0

- International Engineering Certificate
- GPA: 3.2/4.0

PUBLICATIONS:

Journals

[1] D. M. Mascareas, E. Flynn, M. D. Todd, T. G. Overly, G. Park, and C. R. Farrar, "Development of capacitance-based and impedance-based wireless sensors and sensor nodes for structural health monitoring applications," *Journal of Sound and Vibration* **329**, pp. 2410–2420, June 2010.

[2] T. G. Overly, K. M. Farinholt, G. Park, and C. R. Farrar, "Developing an integrated software solution for active-sensing shm," *Smart Structures and Systems* **5**(4), pp. 457–468, 2009.

[3] T. G. Overly, G. Park, K. M. Farinholt, and C. R. Farrar, "Piezoelectric active-sensor diagnostic and validation using instantaneous baseline data," *IEEE Sensor Journal* **9**, November 2009.

[4] D. M. Mascareas, E. Flynn, M. D. Todd, T. G. Overly, K. M. Farinholt, G. Park, and C. R. Farrar, "Experimental studies of using wireless energy transmission for powering wireless sensor nodes," *Journal of Sound and Vibration* **329**, pp. 2421–2433, June 2010.

[5] T. G. S. Overly, K. M. Farinholt, G. Park, and C. R. Farrar, "Development of new generation of impedance-based wireless sensing device," *Smart Materials and Structures* **17**, 2008.

Conference Proceedings

[6] K. M. Farinholt, S. G. Taylor, T. G. Overly, G. Park, and C. R. Farrar, "Recent advances in impedance-based wireless sensor nodes," in *ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems*, October 2008.

[7] T. G. Overly, K. M. Farinholt, G. Park, C. R. Farrar, and E. Flynn, "Developing an integrated software solution for active-sensing structural health monitoring," in *Proceedings of 5th ASCE International Engineering and Construction Conference*, August 2008.

[8] K. M. Farinholt, T. G. Overly, G. Park, and C. R. Farrar, "New generation of impedance-based wireless active-sensor node," in *Proceedings of 4th European Structural Health Monitoring Conference*, July 2008.

[9] G. Park, T. G. Overly, K. M. Farinholt, C. R. Farrar, D. M. Mascareas, and M. D. Todd, "Experimental investigation of wireless active-sensor nodes using impedance-based structural health monitoring," in *Proceedings of 15th SPIE Conference on Smart Structures and Nondestructive Evaluation*, March 2008.

[10] T. G. S. Overly, G. Park, and C. R. Farrar, "Development of signal processing tools and hardware for piezoelectric sensor diagnostic processes," in *Proceedings of 14th SPIE Conference on Smart Structures and Nondestructive Evaluation*, **6530**, 2007.

[11] T. G. S. Overly, G. Park, and C. R. Farrar, "Development of impedance-based wireless active-sensor node for structural health monitoring," in *Proceedings of 6th International Workshop on Structural Health Monitoring*, September 2007.

[12] G. Park, T. G. Overly, and C. R. Farrar, "Piezoelectric active-sensor diagnostic and validation process for shm applications," in *Proceedings of 6th International Workshop on Structural Health Monitoring*, September 2007.

[13] M. D. Todd, D. L. Mascareas, E. B. Flynn, T. S. Rosing, B. Lee, D. Musiani, S. Dasgupta, S. Kpotufe, D. Hsu, R. Gupta, G. Park, T. G. Overly, M. Nothnagel, and C. R. Farrar, "A different approach to sensor networking for shm: Remote powering and interrogation with unmanned arial vehicles," in *Proceedings of 6th International Workshop on Structural Health Monitoring*, September 2007.

[14] T. G. S. Overly, "Integration of hardware and software for active-sensors in structural health monitoring," Master's thesis, University of Cincinnati, April 2007.

[15] T. G. Overly, G. Park, C. R. Farrar, and R. J. Allemang, "Compact hardware development for shm and sensor diagnostics using admittance measurements," in *Proceedings of the IMAC-XXV*, SEM, February 2007.

[16] G. Park, T. G. Overly, M. J. Nothnagel, C. R. Farrar, D. M. Mascareas, and M. D. Todd, "A wireless active-sensor node for impedance-based structural health monitoring," in *Proceedings of US-Korea Smart Structures Technology for Steel Structures*, November 2006.

[17] A. A. Cardi, B. D. Kosbab, T. G. Overly, J. F. Schultze, and M. T. Bement, "Damage assessment through control feedback expansion of modal space," in *Proceedings of the IMAC-XXIV*, SEM, January 2006.

Abstract Only

[18] C. R. Farrar, T. G. Overly, K. M. Farinholt, D. L. Mascareas, E. B. Flynn, and M. D. Todd, "Remote powering and interrogation of a sensing network using unmanned aerial vehicles," in *5th annual DOE sensors workshop (Abstract Only)*, Livermore National Laboratory, 2008.

[19] T. G. S. Overly, G. Park, and C. R. Farrar, "Low-power active-sensing structural health monitoring sensor node," in *7th Biennial Tri-Laboratory Engineering Conference (Abstract Only)*, 2007.

[20] G. Park, T. G. Overly, and C. R. Farrar, "Performance assessment and diagnostics of piezo-electric active-sensors used in structural health monitoring," in *2006 Integrated Systems Health Management Conference (Abstract Only)*, August 2006.