TIMOTHY OVERLY

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EXPERIENCE:

SPIDAWeb LLC **Columbus, Ohio**
Lead Developer/Manager: 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

TK Engineering **Cincinnati, Ohio**
Engineering Apprentice: Analysis Engineering *August 2005 – April 2006*

- Constructed two and three dimensional finite element models of aircraft engine parts for modeling heat transfer, stress and life
- Automated boundary condition application through the programming of macros in ANSYS

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

Enable Medical Corporation **Cincinnati, Ohio**
Manufacturing, Research and Development Co-op: Product Engineering *June 1999 – August 2000*

- Designed and constructed prototype devices for use in treating heart disease that led to a device being taken to market
- Performed primary testing and qualification before product release for both endoscopic and open surgery devices

EDUCATION:

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

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

B.S. in Mechanical Engineering - June 2002
- International Engineering Certificate
- GPA: 3.2/4.0

COMPUTER SKILLS:

Languages	Frameworks	Databases	Build Systems	Testing Systems	Other Syntaxes
Java	Grails	PostgreSQL	Maven	JUnit	HTML
Groovy	EmberJS	Oracle	Ant	Mokito	CSS
Ruby	NodeJS	SQL Server	Ivy	Jenkins	Markdown
JavaScript	Sinatra	Redis	Grunt	Jasmine	LESS
CoffeeScript	Ruby on Rails	MySQL	Rake	CircleCI	SCSS
Bash		MongoDB	NPM	Travis	XML
MATLAB			Gradle		JSON
C					LaTeX
SQL					

Deployment Servers	Operating Systems	Protocols	Version Control	Design Concepts
Tomcat	OS X	REST	Git	MVC
httpd	Linux	SOAP	Subversion	IoC
Google Cloud	Windows	SSL		SOA
Heroku				Agile
				Scrum

OPEN SOURCE PROJECTS:

- *truck circuit:* (author) an arduino project with matching cicuit diagram for a halloween costume
- *apply:* (author) a small tool that can be used as a test for developer resume submittal
- *classpath-helper:* (author) series of script tools to help diagnose classpath issues in java jars/wars
- *ssl-helper:* (author) script to help generate self-signed certificates for apache tomcat and httpd
- *jekyll-page-list-plugin:* (author) a simple plugin for Jekyll that list pages
- *SHM Tools:* (contributor) a package of engineering tools used in structural health monitoring.

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 piezoelectric active-sensors used in structural health monitoring," in *2006 Integrated Systems Health Management Conference (Abstract Only)*, August 2006.