

THOMAS P ZACHARIAH

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2260 Hayward St, 2909 BBB, Ann Arbor, MI 48109

EDUCATION

- University of Michigan; Ann Arbor, MI** **August 2013 – Present**
Ph.D. Pre-Candidate — Computer Science & Engineering
Advisor: Prabal Dutta
- Loyola Marymount University; Los Angeles, CA** **August 2009 – May 2013**
B.S.E. Electrical Engineering with Emphasis in Computer Engineering
Minors in Applied Mathematics & Computer Science
GPA: 3.8 — Magna Cum Laude

RESEARCH EXPERIENCE

- University of Michigan; Ann Arbor, MI
Graduate Student Research Assistant, Computer Science & Engineering **May 2014 – Present**
- Working with Prabal Dutta in Lab11 (MWeiser) in Computer Science & Engineering
 - Focusing on mobile-centric gateway and user-interfacing architectures for the Internet of Things
- Virginia Tech; Blacksburg, VA
Cognitive Communications REU, Research on Space Weather Impacts on GPS Signals **June 2012 – August 2012**
- Developed data analysis programs & graphical user interface to study space weather effects on GPS signals.
 - Performed analysis of recorded data from new space weather measurement instrumentation deployed in Antarctica.
- Loyola Marymount University; Los Angeles, CA
Research on TinyOS-based Sensor Network Applications **October 2012 – December 2012**
- Developed software for and deployed a series of TinyOS-based wireless sensor networks.
 - Implemented a sensor network for parking lot occupation detection.
- Loyola Marymount University; Los Angeles, CA
Research on Climate Change Impacts from Climate Model Data **September 2010 – May 2013**
- Analyzed climate model data to predict impacts of climate change on Southern California's water resources in the next century. Worked with Dr. Jeremy Pal, member of 2007 Nobel Prize-winning IPCC team.
 - Developed programs to process and analyze climate model data, focusing on Southern California watersheds.

TEACHING EXPERIENCE

- University of Michigan; Ann Arbor, MI
Graduate Student Instructor — EECS 270 Introduction to Logic Design (F'13, W'14) **September 2013 – April 2014**
- Held office hours, lectured class, led study sessions, managed grades, wrote homework assignments, hired & supervised homework graders, and helped write & grade exams.
- Loyola Marymount University; Los Angeles, CA
Teacher's Assistant & Lab Assistant — ELEC 301, 353, 302, 354 Electronics I, II, Labs **September 2012 – May 2013**
- Guided engineering students in Junior Labs, and provided assistance to the professor as needed.
 - Offered bi-weekly office hours for tutoring in respective courses.
- Loyola Marymount University; Los Angeles, CA
Teacher's Assistant & Lab Assistant — ELEC 210, 213, 220 Circuits I, II, Lab **September 2011 – May 2012**
- Guided engineering students in Sophomore Labs, and provided assistance to the professor as needed.
 - Offered bi-weekly office hours for tutoring in respective courses.
- Loyola Marymount University; Los Angeles, CA
Tau Beta Pi Engineering Tutor **January 2012 – May 2013**
- Offered weekly tutoring service for all engineering students in any requested material.

CONFERENCES, WORKSHOPS, & PUBLICATIONS

1. **Thomas Zachariah**, Joshua Adkins, Prabal Dutta. Browsing the Web of Things with Summon. In *Proceedings of the 13th ACM Conference on Embedded Networked Sensor Systems*. SenSys '15. Seoul, South Korea. November 2015. Demo.
2. Joshua Adkins, Bradford Campbell, Samuel DeBruin, Branden Ghena, Benjamin Kempke, Noah Klugman, Ye-Sheng Kuo, Deepkia Natarajan, Pat Pannuto, **Thomas Zachariah**, Alan Zhen, Prabal Dutta. Browsing the Web of Things with Summon. In *Proceedings of the 13th ACM Conference on Embedded Networked Sensor Systems*. SenSys '15. Seoul, South Korea. November 2015. Demo.
3. Brad Campbell, Noah Klugman, **Thomas Zachariah**. HotMobile 15. In *IEEE Pervasive Computing: Mobile and Ubiquitous Systems*, Vol. 14, No. 2. April 2015. Article.
4. **Thomas P Zachariah**, Noah Klugman, Bradford Campbell, Joshua Adkins, Neal Jackson, Prabal Dutta. The Internet of Things Has a Gateway Problem. In *Proceedings of the 16th Workshop on Mobile Computing Systems and Applications*. HotMobile '15. Santa Fe, New Mexico, USA. February 2015. Workshop.
5. **Thomas P Zachariah**, Rafael Isaac, Lilian Kim, Norberto Rios. Development of Space Weather Monitoring System and Statistical Study of GPS Scintillations. In *American Geophysical Union Fall Meeting 2012*. AGU '12. San Francisco, California, USA. December 2012. Poster.
6. Hyomin Kim, Kshitija Deshpande, Calvin R Clauer, Gary S Bust, Geoffrey Crowley, Todd E Humphreys, Lilian Kim, Marc Lessard, Allan T Weatherwax, **Thomas P Zachariah**. Ionospheric Irregularities at High Latitudes During Geomagnetic Storms and Substorms: Simultaneous Observations of Magnetic Field Perturbations and GPS Scintillations. In *American Geophysical Union Fall Meeting 2012*, AGU '12. San Francisco, California, USA. December 2012. Poster.

OTHER WORK EXPERIENCE

Loyola Marymount University; Los Angeles, CA

Engineers Without Borders, El Salvador Project Leader

January 2011 – June 2013

- Led team of engineering students in replacing a waterline system for a poor island community's only school and set up measures to ensure water potability throughout the island (filtration systems & water education).
- Worked with island community's Women's Cooperative to improve its facilities to meet official federal standards to allow for sale within the country of goods made in the facilities.

Loyola Marymount University; Los Angeles, CA

Event Operations Assistant

September 2009 – May 2013

- Collaborated with hosts and personnel to plan and conduct events held at the University.
- Set up laptops, projectors, sound systems, staging, tables, chairs, etc. for events.

Los Angeles, CA

Independent Web Designer

January 2005 - Present

- Working with HTML, JavaScript, PHP, CSS, Flash, and image design to create captive websites & web apps.
- Regularly utilizing programs such as Dreamweaver, Flash, and Photoshop, alongside my own original coding.

HONORS

- NSF GRFP Honorable Mention, 2015
- Tau Beta Pi (Engineering Honor Society), since 2011
- Boy Scouts, 1999-2009 —Eagle Scout & Brotherhood Member of Order of the Arrow (Boy Scout Honor Society)

SKILLS

- Windows, Macintosh, Linux, TinyOS, iOS, Android
- Programming: Assembly, C, C++, NesC, Objective-C, Java, Python, Node.js, Haskell, Shell, MATLAB
- Hardware Defined Languages: SystemVerilog
- Web Design: HTML5, JavaScript, PHP, CSS3, Flash, ActionScript, Apache Maven, graphic design/animation
- Electrical Engineering: B² Logic, Logisim, Multisim, NI Elvis, NI LabView, Xilinx ISE & FPGA, Arduino, M68HC12
- Miscellaneous: MS Office, Visual Studio; Adobe Photoshop, Premiere Pro, Dreamweaver, Freehand, Flash; Git