

# THOMAS P ZACHARIAH

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## 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 embedded systems, particularly in development & application of wireless sensor network architectures
- 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 within the next century. Mentored by Nobel Laureate, Dr. Jeremy Pal of the Civil Engineering Dept.
  - 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 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*, December 2012.
2. 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*, December 2012.

## 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 tables, chairs, staging, laptops, projectors, sound systems, etc. for events.

**Web Designer (Independent)**

**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

- 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
- Programming Languages & HDLs: Assembly, C, C++, NesC, Objective-C, Java, Python, Shell, MATLAB, SystemVerilog
- Web Design: HTML5, JavaScript, PHP, CSS3, Flash, ActionScript, Apache Maven, graphic design/animation
- Electrical Engineering: B<sup>2</sup> 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