

# Anh Luong

NATIONALITY: UNITED STATES OF AMERICA · PLACE OF BIRTH: VIETNAM

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## Education

### University of Utah

PHD IN ENGINEERING: COMPUTER ENGINEERING

**Dissertation:** Radio Frequency Sensing Networks for Localization, Synchronization, and Health Monitoring,

**Advisor:** Professor Neal Patwari

*Salt Lake City, Utah, USA*

*August 2013 - August 2017*

### University of Utah

B.S./M.S. IN ENGINEERING: COMPUTER ENGINEERING

**Concentration:** VLSI & Wireless Embedded Sensing Systems, **Advisor:** Professor Thomas Schmid

*Salt Lake City, Utah, USA*

*August 2008 - May 2013*

## Professional/Research Experience

### Wireless, Sensing, and Embedded Systems, Laboratory of Prof. Anthony Rowe

POSTDOCTORAL RESEARCHER

*Carnegie Mellon University*

*August '17 - PRESENT*

### Sensing and Processing Across Networks, Laboratory of Prof. Neal Patwari

POSTDOCTORAL FELLOW

*University of Utah*

*May '17 - August '17*

### Plusone Technologies LLC (Start-up company)

TECH. CONSULTANT

- Design & Implement a system for non-invasive breathing monitoring

*Salt Lake City, Utah*

*January '17 - February '17*

### XANDEM (Start-up company)

TECH. CONSULTANT

- Design the hardware to detect and locate the movement of people

*Salt Lake City, Utah*

*December '14 - PRESENT*

### Sensing and Processing Across Networks, Laboratory of Prof. Neal Patwari

RESEARCH ASSISTANT

- Design & Implement a bandwidth efficient and highly accurate wireless time synchronization protocol
- Design & Implement a research platform for wireless time synchronization (Beaglebone Black Cape based on Cortex-M4, FPGA, Zigbee, BLE, & UWB radios)
- Create system to generate high-res RSS with low-cost COTS Radio (TI CC1200) for non-invasive breathing monitor, gestures recognition, etc...
- Design & Implement non-invasive breathing and localization algorithms
- Design & Implement a hardware platform for breathing and localization for Search and Rescue operations
- Design & Implement hardware for spatial diversity to enhance accuracy and reduce deployment density
- Design & Implement Wireless Communications Protocol to accommodate large scale deployments for Radio Tomographic Imaging

*University of Utah*

*Summer '14 - Spring '17*

### SmartStream, EmbeddedHQ LLC (Start-up company)

CTO / CO-FOUNDER

- Design & Implement a smart audio mixer for streamers

*Salt Lake City, Utah*

*July '15 - April '16*

### Wireless Embedded Sensing Systems Lab, Laboratory of Prof. Thomas Schmid

RESEARCH ASSISTANT

- Design & Implement hardware and software solution for a Scalable Programming Interface for Wireless Ranging Enabled Node
- Conduct Contact among Utah's School-aged Population experiments, a study of population movement patterns for influenza tracking purposes
- Design & Implement a system to create printable circuits with Makerbot Thing-O-Matic

*University of Utah*

*Summer '12 - Spring '14*

## Technical Skills

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### HARDWARE

**CAD** Altium, Eagle, SolidWorks, Synopsys EDA

**FPGA** Microsemi IGL00, Microsemi SmartFusion, Xilinx Spartan-6, Xilinx Spartan-3E

**μController** ARM-based, Texas Instruments MSP430, Beaglebone series (Texas Instruments AM335x), Raspberry Pi series, Intel 8051, CR16

**Radio** Zigbee/IEEE802.15.4 (Texas Instruments CC2420, CC2520, CC253x, CC1200, Atmel RF233), WiFi (Texas Instruments CC3000, CC3200), Digi XBEE

### FIRMWARE

**Language** C, C++, Verilog, NesC, Assembly (CR16, ARM, x86, MSP430, TI PRU), Gcode

**IDE** gcc-based, Eclipse-based, IAR, Microsemi Libero, Xilinx ISE

### SOFTWARE

**Language** C, C++, Python, C#, Objective-C, Java, Rascal

**OS** Mac, Windows, Debian-based

## Teaching Experience

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### ECE/CS 5780/6780 Embedded Systems Design

LAB INSTRUCTOR/TEACHING ASSISTANT

- Guide student through process of implementation of own embedded systems
- Instruct on exercises and projects using various embedded platforms

*University of Utah*

*Spring '13, Spring '14*

### Robotics and Engineering Matters

INSTRUCTOR

- Lead discussions on the importance of engineering
- Introduce students to embedded systems with Arduino-based exercises

*University of Utah*

*Summer '12*

## Publication

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### CONFERENCE

ACM IPSN 2016 **Highly Reliable Signal Strength-Based Border Crossing Localization in Outdoor Time-varying Environments**

*Vienna, Austria*

IEEE SECON 2014 **Dial It In: Rotating RF Sensors to Enhance Radio Tomography**

*Singapore*

### WORKSHOP

HotWireless 2016 **RSSI step size: 1 dB is not enough!**

*New York City, New York*

IEEE SenseApp 2014 **WRENSys: Large-Scale, Rapid Deployable Mobile Sensing System**

*Edmonton, Canada*

### DEMO/POSTER/PRESENTATION

ACM Sensys 2016 **A Platform Enabling Local Oscillator Frequency Synchronization**

*Stanford, California*

ACM IPSN 2015 **RUBreathing: non-contact real time respiratory rate monitoring system**

*Seattle, Washington*

ACM SenSys 2014 **Doctoral Colloquium**

*Memphis, Tennessee*

ACM Sensys 2012 **Best Demo Award Rapid Deployable System for Human Contact Network Research**

*Toronto, Canada*

## Committee Work

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2015	<b>ACM IPSN</b> , Shadow Program Committee	<i>Seattle, Washington</i>
2017	<b>IEEE WCNC</b> , Reviewer	<i>San Francisco, California</i>

## Outreach

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2012 - 2013	<b>RoboUtes</b> , Lead Computer Engineer	<i>University of Utah</i>
2012	<b>Teton Science Schools Lab Tour</b> , Presenter	<i>UofU WiESEL Lab</i>
2012	<b>Salt Lake City Mini-Maker Faire</b> , Presenter	<i>Salt Lake City, Utah</i>
2010 - 2012	<b>Computer Engineering Student Advisory Committees</b> , Member	<i>University of Utah</i>
2010 - 2012	<b>UofU CoE Engineering Day &amp; Highschool Recruit Day</b> , Recruiter	<i>University of Utah</i>

## Honors & Awards

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2016	<b>Best Clinic Award Sandia National Laboratories Clinic 2016 - DAQ for EIT</b> , Mentor	<i>UofU CoE</i>
2014	<b>Student Travel Grant</b> ,	<i>Sensys</i>
Spring '09, Fall '10	<b>Dean's List</b> ,	<i>University of Utah</i>
	<b>Electrical and Computer Engineering Undergraduate Scholarship</b> ,	<i>University of Utah</i>
	<b>Clegg Memorial Scholarship</b> ,	<i>University of Utah</i>

## Language

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English, Vietnamese, Spanish