

# Diana Zhang

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## Research Interests

Computer Systems; Wireless Communications; Computer Networking; Sensing; Mobility

## Education

Carnegie Mellon University, Pittsburgh, Pennsylvania USA

**Ph.D. in Electrical and Computer Engineering**, Beginning Aug. 2016 (In Progress)

Advisor: Swarun Kumar

The Pennsylvania State University, University Park, Pennsylvania USA

**B.S. in Electrical Engineering; B.S. in Computer Engineering**, May 2016

with Honors, Distinction, and an International Engineering Certificate.

*Studied abroad at The University of Auckland in Semester One, 2015*

## Research Experience

Research Assistant, Carnegie Mellon University, Aug. 2016 - Present

Advisor: Swarun Kumar

**WiFi Interferer Material Classification and Localization** (Aug. 2017-Present): Currently, I work with off-the-shelf WiFi cards to classify the material of an environmental object (eg. wood, metal, human) using its physical properties, and to determine what angle the object is at. Since WiFi signals can propagate around corners and through walls, we hope to use this technology for autonomous vehicles and searching disaster sites.

**LPWANs** (October 2016- Present): I consider challenges and opportunities as IoT, and its enabling communication technology, Low-Power Wide Area Networks, scales densely. I work on implementing and evaluating methods for issues like handling collisions, increasing range, and network localization.

Undergraduate Research Assistant, Clemson University, June 2014 - Aug. 2014

Mentors: Jacob Sorber, Josiah Hester

**Federated Power**: In intermittent computing, it is not guaranteed that sensor nodes will have a continuous and unbounded supply of energy. To handle this, I worked on the early idea and prototyping stages of federated power, for which an ultra-low-power processor allocates a power supply to different components of a node.

## Publications

R. Eletreby, D. Zhang, S. Kumar and O. Yağan: "Empowering Low-Power Wide Area Networks in Urban Settings" - ACM SIGCOMM 2017

## Honors and Awards

ARCS Pittsburgh Chapter Scholar, Aug. 2016-Present

Michel E. and Kathy Doreau Graduate Fellowship in ECE, Aug. 2016-May 2016

Penn State Women in Engineering Joelle Leadership Award, May 2016

*Recognizes a woman who demonstrated leadership, citizenship, and volunteer spirit that positively affect the climate for women in the College of Engineering*

## Industry Experience

Embedded Software Engineering Intern, Harris Corporation, June 2016 - August 2016

**People Sensing:** Investigated methods for calculating the number of people in a room, and implemented and deployed a prototype entry/exit counter in Python on a Raspberry Pi.

## Teaching Experience

Graduate Teaching Intern, Carnegie Mellon University

**Introduction to Telecommunication Networks**                      Spring 2017                      S. Kumar

Undergraduate Teaching Intern, Penn State University

**Introduction to Programming Techniques**                      Spring 2016                      S. Shaffer

**Digital Design: Theory and Practice**                              Fall 2015                      J. Sampson, V. Narayanan

**Circuits and Devices**    Fall 2014                      D. Salvia

Lab Assistant, Penn State University                              Fall 2013, Spring 2014                      D. Salvia

## Graduate Coursework

**Wireless Networks and Applications**                              Spring 2017                      P. Steenkiste

**Wireless Communications**    Fall 2016                      R. Negi

**Packet Switching and Computer Networks**                      Fall 2016                      H. Kim

## Involvement

**Volunteer:** CMU ECE Spark Saturdays, Fall 2016-Present

*Volunteer for High School Outreach Programs with CMU's ECE Outreach Organization*

**President:** Penn State Association of Women in Computing, Sept. 2014 - Sept. 2015

*Led efforts to attract and retain women in computing at Penn State*