

Curriculum Vitae

Abraham Gonzalez

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Education

Ph.D. — Electrical Engineering and Computer Science
University of California, Berkeley

Aug. 2018

Bachelors of Science — Electrical Engineering
The University of Texas at Austin
GPA — Overall: 3.98/4.00 Major: 3.98/4.00

Aug. 2014 - May 2018

Relevant Coursework

Computer Engineering — Computer Architecture, Digital Systems Design Using HDL, Embedded Systems Design Lab, Real-time Operating Systems, Digital Logic Design, Software Design I & II, Algorithms, and Honors Engineering Design I & II.

Electrical Engineering — Electric Circuits Lab, Solid State Electronic Devices, Electromagnetic Engineering, Circuit Theory, Intro to Probability, and Engineering Communication.

Experience

Scalable Performance CPU Development Group Intern
Intel — Austin, TX

May 2018 - Aug. 2018

- Worked on debugging tools for microcontroller integration team.
- Helped setup infrastructure between firmware team and microcontroller integration team to speed up work.

Microsystems Technology Lab Intern
Massachusetts Institute of Technology — Cambridge, MA

Jun. 2017 - Aug. 2017

- Researched variations in electroplating growth in redistribution layers under the supervision of Dr. Boning.
- Designed various neural networks and machine learning models for electroplating growth using Tensorflow.
- Presented final research poster summarizing work and participated in multiple MITSRP workshops.

Printing Electronics Research Assistant
The University of Texas at Austin — Austin, TX

Jan. 2017 - Jun. 2017

- Researched and fabricated printed antennas under the supervision of Dr. Chen.
- Printed and tested fixed PAA antennas on Kapton with various nano-particle inks.

QCA Research Assistant
The University of Texas at Austin — Austin, TX

May 2015 - Aug. 2016

- Researched and designed Quantum Cellular Automata (QCA) circuitry with Dr. Swartzlander.
- Optimized QCA implementations of the Carry-Lookahead and Conditional Sum adder through QCA Designer.
- Reported back to Dr. Swartzlander on results and improvements to QCA circuit designs and layouts.

Office Shared Graphics Explore Intern
Microsoft — Redmond, WA

May 2016 - Aug. 2016

- Created and added new features to the Office Ink suite using C++.
- Investigated new feature sets with other Microsoft Program Managers and customers.
- Created physical network of Arduino microcontrollers for OneWeek Hack-a-thon that once connected to each other sent a unique code to the main server (HTTP requests).
- Collaborated with senior engineers and engineers on software design and implementation.

UIM Driver Intern
Qualcomm — San Diego, CA

May 2015 - Aug. 2015

- Designed software framework for smartcard interaction in C++/CLI and C++.
- Integrated designed framework into .NET application managing smartcards via CCID by utilizing APDU transmission and logging; file system viewing; file data parsing and manipulation; and smartcard reader management.
- Communicated with engineers on software design and implementation.
- Created gesture controlled car with Particle Core for Hack-Mobile Hack-a-thon.

Electronic Cooling Research Lab Assistant
Villanova University — Villanova, PA

Jun. 2012

- Participated in constructing and remodeling a cooling test mechanism.

- Investigated techniques to cool spherical devices within a wind tunnel.
- Communicated with Ph.D. students and Masters students.

Conferences

ACM Richard Tapia Celebration of Diversity in Computing Conference Sept. 2018
University of California, Berkeley — Orlando, FL

- Attended multiple workshops on open source software, ethics in AI, networking, and diversity.
- Participated as a UC Berkeley Scholar and FLIP Alliance student.

Society of Hispanic Professional Engineers National Conference Nov. 2017
Society of Hispanic Professional Engineers — Kansas City, MO

- Participated and won the 2nd place award in the Engineering Science Symposium (ESS) Poster Competition.
- Selected as 1 of about 40 students nationally for ESS Poster Competition.
- Attended Engineering Science Symposium Oral Presentations and workshops.

Supercomputing Conference - SC15 Nov. 2015
Tezzaron Semiconductor — Austin, TX

- Worked with the Tezzaron company booth as an usher during exhibit fair.
- Networked with other high performance computing (HPC) companies.

Qualcomm DECA Conference Jan. 2015 - Feb. 2015
Qualcomm — San Diego, CA

- Developed professional and social skills through mock interviews and workshops.
- Participated and won Qualcomm QHack.
- Selected as 1 of 51 students nationally for DECA Conference.

Presentations

Capstone Design Showcase Nov. 20, 2017
The University of Texas at Austin — Austin, TX

- Project Presented: Enhancing an Out-of-Order Processor Simulator for Cloud Applications.

Engineering Science Symposium Poster Session Nov. 3, 2017
Society of Hispanic Professional Engineers National Conference — Kansas City, MO

- Research Presented: A Machine Learning Approach to Modeling Electroplating Process Variations in IC Redistribution Layers.
- Awarded 2nd Place in Engineering Science Symposium Poster Competition.

MITSRP Poster Session Aug. 10, 2017
Massachusetts Institute of Technology — Cambridge, MA

- Research Presented: A Machine Learning Approach to Modeling Electroplating Process Variations in IC Redistribution Layers.

Projects

Enhancing an Out-of-Order Processor Simulator for Cloud Applications — Capstone Project

- Designed and developed new software data-structures for emulating simultaneous multithreading on ZSim.
- Worked with an out-of-order processor pipeline to introduce new hardware scheduling schemes to ensure quality of service for latency critical tasks.
- Presented a poster of final results at The University of Texas Electrical Engineering Spring Open House.

Bounce Music App for Android — Individual Project

- Designed and developed an app in which a user can stream music to multiple phones within the same vicinity.
- Used Spotify API to access and display a catalog of music and sockets for basic connection capabilities.

Skills

Programming Languages —

- Highly Proficient: C, C++, C++/CLI, Python, TensorFlow, Verilog, VHDL, Git, and LC-3 Assembly.
- Proficient: ARM Assembly, Android Java, C#, and Subversion.

Embedded Systems — Tiva Launchpad, Arduino, SparkFun, and Particle Core microcontrollers.

Electrical Equipment — Soldering, oscilloscopes, logic analyzers, and multimeters.

Professional Leadership and Membership

Member — Latinx Association of Graduate Students in Engineering and Science Fall 2018 - Present

Vice President — Eta Kappa Nu Electrical Engineering Honor Society Fall 2017 - Spring 2018

Corresponding Secretary — Eta Kappa Nu Electrical Engineering Honor Society Summer 2017 - Fall 2017

Member — Eta Kappa Nu Electrical Engineering Honor Society Spring 2016 - Present

Member — Institute of Electrical and Electronic Engineers Fall 2014 - Present

Member — Society of Hispanic Professional Engineers (SHPE)	Fall 2014 - Present
Pi Tutor — Equal Opportunity in Engineering (EOE)	Fall 2015, Fall 2017
Academic Director — Society of Hispanic Professional Engineers	Summer 2016 - Summer 2017
Organizing Committee Member — 3 Day Startup Austin	Fall 2014 - Fall 2015
Participant — 3 Day Startup Austin	Fall 2014

Honors and Awards

EECS Excellence Award — University of California at Berkeley	Fall 2018
Berkeley Fellowship for Graduate Study — University of California at Berkeley	Fall 2018
GEM Fellowship Recipient — GEM	Spring 2018
Honorable Mention — NSF GRFP	Spring 2018
Highest Honors — The University of Texas at Austin	Spring 2018
Distinguished College Scholar — The University of Texas at Austin	Spring 2018
Academic Leader Hall of Fame Inductee — Equal Opportunity in Engineering Program	Spring 2018
Roberto Rocca Scholarship Recipient — Tenaris	Fall 2017
Second-Place Award Winner — SHPE National Conference Poster Competition	Fall 2017
Distinguished College Scholar — The University of Texas at Austin	Spring 2017
Victor L. Hand Scholarship Recipient — Victor L. Hand Endowed Scholarship Fund	Fall 2016
College Scholar — The University of Texas at Austin	Spring 2016
Diversity Scholarship Recipient — Texas Instruments	Fall 2015
Freshman Academic Excellence Award Winner — EOE and SHPE	Spring 2015