

# Abraham Gonzalez

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## Education

### University of California, Berkeley

Expected July 2025

*Ph.D. in Electrical Engineering and Computer Sciences*, advised by [Krste Asanović](#), GPA: 3.96/4.0

Dissertation Title: “End-to-end Heterogeneous System Design for Hyperscale Big Data Processing”

### The University of Texas at Austin

August 2014 - May 2018

*B.S. in Electrical and Computer Engineering*, GPA: 3.98/4.0

## Work Experience

### Graduate Student Researcher

August 2018 - Present

University of California, Berkeley — Berkeley, CA

- Ph.D. candidate and member of [ADEPT](#) and [SLICE](#) lab advised by [Professor Emeritus Krste Asanović](#).
- Co-lead of the Hyperscale system-on-chip (SoC) project focused on hyperscale hardware/software co-design.
- Co-lead of the [Chipyard SoC framework](#) (used in 20+ tape-outs @ 4+ institutions, cited by 350+ publications).
- Co-lead of the award-winning [FireSim](#) FPGA-accelerated simulator (used in 60+ pubs. @ 20+ companies/universities).
- Developer of the [Berkeley Out-of-Order Machine \(BOOM\)](#), the first open-source RISC-V out-of-order core.
- Led tape-out of first of its kind [Chipyard-based 106.1 GOPS/W heterogeneous multi-core multi-accelerator SoC](#).
- [Published research and tape-outs](#) at top conferences including ISCA, DAC, IEEE MICRO, and ESSCIRC.
- Lead organizer for 10+ [tutorials and workshops](#) with 200+ unique attendees at top conferences.

### Student Researcher Intern

June 2021 - July 2024

Google — Sunnyvale, CA

- Student researcher working with [Engineering Fellow/VP Parthasarathy Ranganathan](#).
- Collaborated with the [SystemsResearch@Google \(SRG\)](#) and [Systems Infrastructure Performance](#) teams.
- Researched data processing and remote procedure call (RPC) optimizations as part of the Hyperscale SoC project.
- Published first of its kind research on [hyperscale big data processing characterization at ISCA '23](#).
- Open-sourced [HyperRPCbench](#), a novel representative RPC benchmark suite, with the [Fleetbench](#) team.

### Silicon Engineering Group Intern

June 2020 - August 2020

Apple — Cupertino, CA

- Engineering intern working under [Distinguished Engineer Si-En Chang](#).
- Developed computer architecture tooling for CPU verification.

### Scalable Performance CPU Development Group Intern

May 2018 - August 2018

Intel — Austin, TX

- Worked on debugging tools for microcontroller integration team with senior engineers.
- Setup novel workflows and infrastructure between firmware and microcontroller integration teams for agility.

### Office Shared Graphics Explore Intern

May 2016 - August 2016

Microsoft — Redmond, WA

- Developed the proof-of-concept “Sketchy Lines” feature (now publicly available) in the Office suite using C++.
- Investigated and coordinated new feature sets with senior engineers, program managers, and customers.

### UIM Driver Intern

May 2015 - August 2015

Qualcomm — San Diego, CA

- Designed a software framework for smartcard (UIM) interaction in C++/CLI and C++ with senior engineers.
- Integrated designed framework into a .NET application managing smartcards via CCID by utilizing APDU transmission/logging; file system viewing; file data parsing/manipulation; and smartcard reader management.

## Skills

### Programming Languages

*Highly Proficient:* Scala, C/C++, Python, Chisel, SQL, {System}Verilog, RISC-V Asm., Bash, {C}Make, Bazel, TCL, TensorFlow, PyTorch

*Proficient:* {ARM, LC-3} Asm., Java, C#, VHDL

### Other

Git, MapReduce, AWS, Google Cloud, Xilinx Virtex/UltraScale+ FPGAs, Cadence EDA tooling

### Electrical Equipment

Soldering, oscilloscopes, logic analyzers, multimeters

## Honors, Awards, and Selections

**UC Berkeley:** DARPA Riser (Fa’22), Analog Devices Outstanding Designer (Sp’20), Berkeley Fellowship (Fa’18), EECS Excellence Award (Fa’18), GEM Fellowship (Sp’18), NSF GRFP Honorable Mention (Sp’18)

**UT Austin and prior:** Highest Honors (Sp’18), Distinguished College Scholar (Sp’17/18), College Scholar (Sp’16), Roberto Rocca Scholarship (Fa’17), Victor L. Hand Scholarship (Fa’16), TI Diversity Scholarship (Fa’15), 2<sup>nd</sup> Best Poster SHPE National Conference (Fa’17), Qualcomm DECA Attendee (1/51 selected nationally) (Sp’15), EOE/SHPE Freshman Academic Excellence Winner (Sp’15), LEAD Conference Attendee (1/30 selected nationally) (Su’13)