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James Zhu

Education

2016-2020 **B.S.**, *University of California, Berkeley*,
Electrical Engineering and Computer Science, GPA 3.972.

Coursework:

- CS 61A - Structure and Interpretation of Computer Programs
- CS 61B - Data Structures
- CS 61C - Machine Structures
- CS 70 - Discrete Math and Probability
- EE 16A / B - Designing Information Systems and Devices I / II

Awards:

- Kraft Award for Freshmen
- Three-semester Dean's List

Experience

2017 **Software Intern, Technical Division**, *Fermi National Accelerator Laboratory*, Batavia, IL.
Developed magnetic sensor interface in LabVIEW, over CANopen, for calibrating supercooled magnets for the Mu2e experiment.

2015 - 2016 **Firmware Intern, Neutrino Division**, *Fermi National Accelerator Laboratory*, Batavia, IL.
Developed FPGA firmware trigger for the LArIAT experiment's liquid argon particle detector.

- Expanded signal input capabilities from 16 to 32, allowing better classification of particles.
- Improved event throughput from 10 / sec to 1 billion / sec, enabling high-frequency event measurement.
- Designed signal simulation test framework, allowing firmware development without recompilation.

Projects

2016- **Telescope**.

- Designed, implemented full Lisp language interpreter in Rust
- Implemented first-class functions, closures, macros

Feb 2017 **DBMS**, *CS 61B Class Project*.

- Designed, implemented database management system in Java
- Built regex-based SQL query parser

Nov 2016 **Twitter Mood Reader**, *Cal Hacks 3.0*.

- Built Node.js web app to gauge national opinion on Twitter hashtags
- Analyzed using IBM's Watson Personality Insights API

Activities

2018- **Officer, Computing Services**, *Eta Kappa Nu, Mu Chapter*, UC Berkeley.

- Leading migration of Rails website to Django

2016- **Firmware Developer**, *CalSol (solar car team)*, UC Berkeley.

- Developed C++ microcontroller firmware for safety-critical battery monitors
- Improved battery error reporting and logging, eliminating silent errors and enhancing driver safety

2015-2016 **Team Captain**, *FIRST Robotics*, Naperville, IL.
Led 50+ member high school robotics team, led software development in LabVIEW

Skills

Languages C++, Java, Python, Node.js, SQL, LabVIEW, Rust, Bash, VHDL