Brian Simpkins

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Education

PITZER COLLEGE | BACHELOR'S DEGREE | EXPECTED MAY 2023

- Major: Computer Science, through Harvey Mudd College
- Relevant Coursework: Data Structures and Development, Computability and Logic, Computer Systems, Programming Languages, Digital Electronics and Computer Architecture
- Current GPA: 4.0

Skills

- (Proficient) Python, Java, Git/GitHub, and R
- (Intermediate) C++, Pandas, LaTeX, SystemVerilog, embedded system interfacing
- (Beginner) HTML, CSS, Docker, Racket, Haskell, C#, and Prolog

Projects

- **Multicycle Processor:** Programmed a multicycle RISC-V processor from scratch in Verilog using only basic logical elements, and implemented it on an FPGA board.
- **Digital Level:** Programmed a REDV microcontroller in C to display an accelerometer's tilt and pitch on a 7x7 LED matrix.
- **Learner:** Used Python's *scikit-learn* to build a random forest model to predict various metrics of an HIV infection based on the genetic sequence of the infecting virus.

Experience

RESEARCH INTERN | FRED HUTCH CANCER RESEARCH CENTER | May 2020 – Current

- Developed R and Python code to conduct statistical learning and analysis for HIV, malaria, and COVID-19 vaccine trials
- Worked on a professional, GitHub-based development team of 13, responsible for modifying others' code and contributing original code
- Designed and implemented customized significance tests using R and Python
- Parallelized R scripts on a large-scale computing cluster using slurm and Linux shell commands
- Frequently worked with senior management and developers at several research institutions
- Contributing author on Moderna's COVID-19 vaccine immune correlates report

TEACHER ASSISTANT | HARVEY MUDD COLLEGE | Jan 2020 – Jul 2020

- Selected as the head grader and tutor for "Digital Electronics & Computer Architecture"
- Coached students in the designing, building, and programming of complex digital systems
- Managed a team of 5 graders and tutors both virtually and in-person

TREASURER | CLAREMONT CLIMBING TEAM | Sep 2018 – Jun 2019

- Managed the finances of a 40+ member competitive climbing team. Earned over $10,000, tripling the previous year's budget.

TEAM MEMBER | HUNT THE WUMPUS CODING CONTEST | Jan 2018 – Jul 2018

- Won 1st place at Microsoft's annual high school coding contest. Our eight-person team built a game in Visual Studio using C# in four months.