Logan Schelly

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Education

Bachelors of Science in Mathematics April 2020
Brigham Young University GPA: 3.17 out of 4.0

- Applied and Computational Mathematics Emphasis (ACME)
- Computer Science Minor
- Recognized for outstanding performance in Mathematics in 2020 and 2018

Skills

Programming Languages

- Python
- C
- C++
- Java
- JavaScript

Other Tools

- LaTeX
- Spreadsheets
- Git
- HTML
- SQL

Work Experience

BYU Math Lab Provo, UT

- **Head Upper Division Tutor** April 2017 – April 2020
  - Conducted weekly meetings to help our team of 10–20 upper division tutors prepare for that week's concepts.
  - Coordinated exam reviews, often teaching them. 10–200 students came, depending on enrollment and subject.
  - Dramatically improved both the number of tutors teaching reviews, and the number of tutors volunteering for reviews by switching from assigning reviews on a week-to-week basis to assigning all reviews at the beginning of the semester.
  - Completely overhauled the tutor handbook.
  - Expanded the tutor application test to include a Mathematical Proof section.
- **Upper Division Tutor** Sep 2015 – April 2017
  - Began by tutoring Linear Algebra, Multivariable Calculus, Introduction to Proofs, and Differential Equations.
  - Expanded my skillset to also tutor for the two upper division math classes tailored to engineers.
- **Lower Division Tutor** Sep 2014 – Sep 2015
  - Provided exceptional service by connecting and building relationships with students in each one-on-one interaction.
  - Tutored Calculus 1 and 2, College Algebra, and Trigonometry students.

Projects

Math Lab Student Sign Up Analysis Nov 2019 – April 2020

- Consolidated data spread across 60+ Excel files.
- Analyzed the almost 900,000+ instances of students signing up for tutor help with Pandas, matplotlib, and sklearn.
- Identified busiest times of the week, and the topics students most often came in for help with.
- Advised scheduling more tutors in the mornings based on my findings.

HTTP Proxy April 2020

- C program that relayed user requests to end server, and relayed server responses to user.
- Used `regex.h` to verify that user requests met HTTP formatting requirements.
- Handled concurrent requests with a threadpool using `pthread.h` and `semaphore.h`.

DNS Stub Resolver March 2020

- Program interfaced with DNS servers to look up IP addresses associated with a web domain name. For example, it would figure out that the domain name www.example.com is associated with IP address 93.184.216.34.
- Formatted queries to DNS standards, sent the queries with UDP, and then decoded responses.
- Written C with `unistd.h`, `sys/socket.h`, `arpa/inet.h`, and `netinet/in.h`.

OpenMP with Mandelbrot Set March 2020

- Parallelized the Mandelbrot visualization code posted on github by Andrej Bauer.

Inverted Pendulum Control April 2019

- Modified the Python code from the CartPole-v1 environment of OpenAI's gym library.
- Updated from Euler's method to Runge-Kutta.
- Applied an LQR control scheme to keep the pendulum upright.