

# Logan Schelly

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## Education

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### Bachelors of Science in Mathematics

Brigham Young University

April 2020

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

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### Programming Languages

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

### Other Tools

- $\text{\LaTeX}$
- Git
- SQL
- Spreadsheets
- HTML

## Work Experience

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Head Upper Division Tutor

Provo, UT

BYU Math Lab

Sep 2014 – April 2020

- Provided exceptional service by connecting and building relationships with students in each one-on-one interaction.
- Continually improved my skills – tutored for entry-level Calculus on entry; tutored for all 6 upper division courses within 2 years.
- Conducted weekly meetings to help our team of 10-20 upper division tutors prepare for that week's concepts.
- Coordinated exam reviews, and often taught them. 10 to 200 students attended, depending on enrollment and subject.
- Switched from assigning reviews week-to-week to making all assignments at the beginning of the semester. This dramatically improved both the number of tutors teaching reviews, and the number of tutors volunteering for reviews.
- Completely overhauled the tutor handbook.
- Expanded the tutor application test to include a Mathematical Proof section.

## Projects

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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`.

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.

Android App – Family History Map

June 2018 – Aug 2018

- Wrote both the client and server in Java.
- Displayed family history data with a Google MapFragment.
- Implemented activities for log-in, map interaction, life event details, and app settings.
- Wrote the SQL commands that the server would use to store and retrieve user data.