Gabriel Thompson

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Relevant Skills

Programming/Markup Languages: Python, Java, JS, HTML, CSS, Processing, Markdown, LaTeX, Sonic Pi
Misc. Tools/Frameworks: React.js, Next.js, Flask, SQL, Mongo, Git/GitHub, Bootstrap, Tailwind, Google Firebase, NumPy

Education

2023 - now **University of Toronto** *(GPA: 3.93/4.00)*
Bachelor of Science, Computer Science
Relevant Coursework: Foundations of Computer Science, Calculus with Proofs, Linear Algebra

2023 - now **Stuyvesant High School**
Relevant Coursework: Software Development, Computer Graphics, APCS, AP Calculus BC

Experience

Software Engineering Intern – Snorkle Labs May 2024 - Aug 2024

- Working on GPT-based feature to generate explanatory science presentations on the human anatomy from a given prompt.
- Created feature to find any of 250+ matching models given any of 6,500+ UBERON code in the human body, by recursively searching children and ancestors of UBERON codes using OLS4 API.
- Front-end of feature written with React.js & Bootstrap, back-end written in Python via AWS Lambda & API Gateway.

Research Intern — CUNY Graduate Center May 2023 - Sep 2023

- Worked on Wikipron, a Python and requests-based library for scraping pronunciation data from Wiktionary in 250+ languages. Worked under Prof. Kyle Gorman.
- Proposed and implemented Python feature using ISO 639 codes allowing >10 new languages' phonologies to be parsed
- Wrote >5 technical write-ups diagnosing causes of bugs and suggesting solutions.

SWE Mentee — Google Mentorship Program Feb 2023 - Jun 2023

- Led team to create DAFTER-GPT, a JS-based Chrome extension and Python-based tool for training an LLM using the OpenAI API to write emails in my writing style, given a corpus of my past emails. Advised by Google Software Engineer.
- Created Python data pipeline to fine-tune GPT-3 model on a corpus of 500+ emails and generate new emails given new prompts. Model trained via the OpenAI API. Link to project source code
- Presented final project to 10+ Google NYC employees. Received positive feedback on project from program director.

IT Director — Stuyvesant Writing Center May 2022 - Jun 2023

- Built and deployed full-stack website to manage school's Writing Center for 3,300+ students and 50+ editors across all four grades. Website built in Python, Flask, SQL, and JS, deployed via DigitalOcean. Link to project
- Developed user authentication system for 300+ accounts, editor feedback system, and email notification system to send 2,000+ emails to 500+ email addresses. Oversaw 24/7 deployment of website for 8,000+ hours.

Other Personal Projects

- **Personal Blog** – My personal blog. Wrote 6,500+ words about CS & math-related topics that interest me, including SHA-256 encryption, 12-tone equal temperament, and the Mandelbrot set.
- **PawPoints** - Web app to track the locations of nearby stray cats and when they were last fed. Won 1st place out of 54 teams at NewHacks 2023. Back-end written with Google Firebase and SvelteKit, front-end written with Tailwind.
- **Layover Calculator** – Web app that uses data from the Yelp and Google Maps API to generate suggestions for things to do during flight layovers. Back-end written in Python, Flask, SQL, front-end written with Bootstrap, JavaScript, and Jinja. Built for Software Development class.
- **Efficiency Gap Calculator** – Python and JS-based website that uses voting data to inform users on how gerrymandered their district is, using an algorithm called the "Efficiency Gap". Built with Bootstrap, jQuery, and MapBox, using CSV data from Harvard DataVerse analyzed with Python. This was my final project for a political writing class.

Honours & Awards

- 1st place at NewHacks 2023 (out of 54 teams). My team was awarded $600. Project link
- 2nd place at StuyHacks 2021 (out of ∼20 teams). Project link