

Michael DeMarco 5th-year at The University of British Columbia; formerly at Tesla, Amazon; 10-time TA

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EDUCATION

The University of British Columbia, B.Sc. Honors Computer Science (Co-op), minor in Data Science
Vancouver, British Columbia—Sep 2019 to Apr 2024 | [Site](#)

- GPA: 93% (4.33/4.33)
- Coursework: Computer Hardware and Operating Systems, Intermediate Algorithm Design and Analysis, Internet Computing
- Awards: Undergraduate Teaching Assistant Award (x2), Trek Excellence Award (Top 5%) (x2), Presidential Scholar

TECHINICAL EXPERIENCE

The Canadian Space Agency, Software Engineer Intern
Saint-Hubert, Québec—May 2023 to present | [Site](#)

- Implemented a **genetic algorithm** for selecting waypoints based on scientific value, distance, and Lunar rover capability.
- Leveraged caching, parallelization, and data structures to reduce computation time **by 90%** for A-to-B shortest path subroutine.
- Developed multi-directional search algorithm using random trees to navigate static and dynamic obstacles between chosen waypoints.
- Integrated algorithm with web interface using **React** and **Django** to empower 10+ scientists to plan missions for 2027 launch.

Tesla, Software Engineer Intern

Palo Alto, California—Sep 2022 to Dec 2022 | [Site](#)

- Collaborated on internal mapping tool to assess and optimize placement of Supercharger stations around the globe.
- Led development of feature to efficiently visualize **thousands of site opportunities** with existing sites using **Flask** and **React**.
- Leveraged **React** best practices to improve code re-use in map UI and its related filters and tools, enabling future extensibility.

Amazon, Software Engineer Intern

Toronto, Ontario—May 2022 to Aug 2022 | [Site](#)

- Enhanced supply chain vendor onboarding for complex, six-step multipage form with tailored product tours in **React**.
- Introduced proxy layer for API calls to enable form experimentation during tours with minimal impact to existing codebase.
- Eliminated need for weekly synchronous vendor on-boarding sessions and reduced FAQ-like tickets given to support team **by 90%**.
- Developed API to track engagement with tours using **TypeScript** and **Jest**, achieving **>95% code coverage**.

Samsung, Software Engineer Intern

Vancouver, British Columbia—Jan 2021 to Aug 2021 | [Site](#)

- Migrated legacy web app written in **Drupal** to service-oriented architecture with **React** and **Node**, complete with unit tests.
- Improved coverage from **70% to >90%** across **Node** services, including tests for code validating APKs approved for Knox devices.
- Created **ETL** pipeline and **Node** service to summarize QR code data from **800,000+** **phones** for analytics dashboard.
- Refactored **MongoDB** aggregation queries and refined indexes to improve endpoint response time by **up to 50%**.

PROJECTS

Midtermr, generate practice exams using web-scraping and Svelte

Vancouver, British Columbia—Nov 2022 to present | [Project](#) | [GitHub](#)

- Built web app to create practice exams from publicly available online textbooks using **Svelte** and **Python**.
- Demo video has **2,000+** views and project has generated hundreds of exams for core UBC undergraduate math courses.

RapViz, visualize 'bars' right in the browser

Vancouver, British Columbia—Mar 2019 to present | [Project](#) | [GitHub](#)

- Created web app to visualize rhyme schemes in lyrics using **React**, **Flask**, **CSS**, and the Spotify Web SDK.
- Earned finalist distinction at Caltech hackathon and project has generated rhyme schemes for **thousands of songs** to date.

VOLUNTEERING

Cloud Native Computing Foundation (CNCF), Kubernetes Release Shadow

Remote, Remote—May 2023 to present | [Site](#)

- Curated and edited release notes from relevant pull requests for the v1.28 release of Kubernetes.
- Coordinated with special interest groups (SIGs) to ensure release note accuracy and determined major themes.

Major League Hacking, Workshop Lead

Remote, Remote—Sep 2020 to present | [Site](#)

- Led **4 workshops** at hackathons for **250+** **participants** on topics such as **React**, **data science**, and **machine learning**.
- Developed engaging delivery style that actively involves participants throughout workshop; recordings have garnered **500+** **views**.

TECHNICAL SKILLS & INTERESTS

Languages Python, TypeScript, JavaScript, Java, SQL, NoSQL, GraphQL, C, C++, HTML, CSS, Dart, TeX, Bash, Protobuf

Frameworks React, Node, Flask, Django, pandas, NumPy, scikit-learn, pytest, Spring, JUnit, Tailwind

Other Git, Docker, Kubernetes, Cloud Computing, AWS, GCP, REST, gRPC

Interests Linguistics, Physics, Economics, Soccer, Hockey, Music, Piano, Saxophone