Matthew Burnes

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Education

August 2020 - Present | University of California, Berkeley
In Progress: Bachelor of Science (Electrical Engineering and Computer Science)
Berkeley, California

September 2016 - June 2020 | Oakville Trafalgar High School
High School
Oakville, Ontario

Work Experience

September 2021 - Present | Researcher | NASA, Berkeley Space Sciences Lab
Berkeley, California
- Student Researcher with the Berkeley division of NASA's ICON Satellite Mission. Tasks involve writing code to analyze data, weekly research communications, and work in Python and Unix. Currently working on code to track long-term data of Volumetric Emission Rates in the Lower Ionosphere. Make heavy use of numpy and matplotlib libraries.

May 2021 - August 2021 | Software Engineering Intern | FleetComplete
Toronto, Ontario
- Worked as an intern in the Developer Operations team, developing scripts and .NET APIs in Powershell and C# in an Agile environment. Communicated daily with team, tested and developed code now being used on live servers.

August 2020 - Present | Various University Coding Projects and Experience | University of California, Berkeley
Berkeley, California
- Creation of an interpreter for Scheme, a lisp-based recursive programming language using Python
- Creation of a modified version of git, implementing support for standard add/rm, commit, branch, and merge operations (as well as some remote commands) in Java
- Creation of game logic for mobile-phone game 2048 in Java
- General Projects: Implementation of Deque API (Doubly Linked Lists and Array Lists including resizing), Game logic for mobile-phone game Plants-Vs-Zombies, dice game Hog, and typing game Cats (similar to TypeRacer)
- Language Competency: Java, Python, SQL, Scheme, C++, MatLab
- Data Structure Competency: Deques, B/Red-Black/Binary Search trees, Graphs (and traversals), Sets and Disjoint Sets, Maps, Queues, Heaps,
- General Topic Competency: Asymptotics, Testing, Subtype Polymorphism, Dynamic Method Selection, Sorting Operations, Inheritance

February 2021 - May 2021 | Research Intern with Professor Brian Wagner | University of California, Berkeley
- Translated documents related to the sale of former slaves in the American south that were initially written in French. Indexed and organized the existing collection to be grammatically accurate

January 2021 - Present | Lead Back-End Developer | Argent
- Created a small side-project with friends from Dartmouth and the University of Toronto — we have been building code with the idea of creating a website for retail investors in the stock market. Our goal, more specifically, is to access and compile data from hubs of investor activity and catalysts for stock activity across the internet, pulling data from and interacting with APIs on Reddit and Twitter, while manually scraping data from government contract websites and housing market reports. All back-end development has been in Python, with the addition of SQL/MySQL used to connect with an AWS server.

Skills and Abilities

Programming Languages
- Java, Python, Matlab, C#, Powershell, SQL

Industry Software and Applications
- JIRA, GitLab, GitHub

Software Engineering Concepts
- Agile Development, Version Control (Git), JUnit Testing, Data Structures, Algorithms

Extra-Curricular

April 2019 - July 2020 | Student Trustee of the HDSB
- Publicly elected by voter population of 38000 to represent 65 000 students to the Board of Trustees of the school board, Chair the Student Senate, sit on the General Assembly of the Ontario Student Trustees' Association. During my time in office, I created and passed the first student-led climate emergency declaration from a school board internationally.

July 2019 - July 2020 | Representative of the Golden Horseshoe Region
- Appointed to the cabinet of the Public Board Council President of Ontario to serve as the representative of 7.9 million people and 837 000 students in the Golden Horseshoe Region. As an executive of the Public Board Council, I oversaw Student Trustee activities in the districts that I managed, and helped to run OSTA, the largest youth stakeholder in education nationwide

March 2018 - June 2020 | Co-founder of Environmental NGO
- Cofounded organization that builds greenhouses out of plastic water bottles, currently partnered with the Ontario Racquet Club, numerous schools, community centres, the CN Tower, the Montreal Science Center, the Old Port of Montreal, Downsview Park, the Terroir Food Festival, and Rogers Centre

December 2014 - April 2018 | Division 1 Ski Racer
- Representative of Canada in international competition, Representative of Ontario in Can-Am competition, highest ranking was twenty-second worldwide at the Whistler Cup International Championships

November 2016 - June 2020 | Varsity School Ski Team (Captain and MVP for Three Years)
- Four Bronze Medals, One Silver Medal, One Gold Medal - Ontario Varsity Provincial Championships. Also served as captain for three years, leading the team to a total of three championship medal finishes

July 2019 - June 2020 | Inventor, lead developer
- Inventor of a product that chemically neutralizes urine to reduce water waste, won awards at a Carleton Science Fair and working towards a patent with a patent lawyer