






PRATHAM LALWANI

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Technical Skills

Languages: Python, Java, C, HTML/CSS, JavaScript, SQL, MATLAB

Developer Tools: VS Code, Eclipse, Google Cloud Platform, Android Studio, Vim, NeoVim, Git, GitHub

Technologies/Frameworks: Linux, PyTorch, Tensorflow, Pandas, Numpy, Scipy, Sympy, JAX, AWS

Experience

UNBC

May 2023 – Present

Research Assistant

Prince George, BC

- Designed and implemented innovative PINN architectures in Python using Tensorflow, enhancing extrapolation capabilities of PINN by 200% and using Git for version control.
- Conducted a thorough error analysis and crafted insightful data visualizations to ensure the model's accuracy and robustness.
- Facilitated weekly meetings with the supervisor, delivering detailed updates on research findings and comprehensive literature reviews.

UNBC

Sept 2022 – Dec 2022

Teaching Assistant and Supplemental Instructor

Prince George, BC

- Weekly tutorial sessions for a class of 30 students, resulting in a 20% increase in grades.
- As a Supplemental Instructor and Marker, facilitated 48 hours of student learning, with a 96% student satisfaction rate over four semesters.
- Help students adjust, learn and socialize through activities like pair and share.

Personal Projects

QuikChat | *React, JavaScript, Node.js, Express and Socket.io* | **GitHub**

- Implemented and designed a real-time chat application using Figma, React (JavaScript), HTML5, CSS3, Node.js, Express and Socket.io.
- Features include, adding friends, making chat groups, last active, login authentication using Auth0 and real-time chat enabled through quick retrieval from NoSQL database (MongoDB).
- Used GitHub for version control and Continuous integration (CI).

Pandemic Simulator | *HTML5, CSS3 and JavaScript* | **GitHub**

- Simulation of a pandemic using a set of Ordinary Differential Equations created by Pratham and parameters like infection rate, death rate, social distancing measures in place, population density, and number of hospital beds provided by the user. Solved the equations numerically using Python and Gekko.
- Users were given visualizations to implement social distancing protocols and minimize fatalities.
- The project was completed using Agile methodology in a group setting, with version control through GitLab.

Personal Portfolio | *Python, Sage* | **GitHub**

- Designed my portfolio page in Figma and implemented using React (TypeScript), TailwindCSS, AWS Lambda and SES for sending emails, and Node.js
- Developed a CI/CD pipeline for deploying my code to Hostinger and AWS using GitHub actions, with auto-build and test.

Open-Source Contributions

microsoft/vscode | *TypeScript*

2023

- Added an accessibility feature to set the amount of time voice input is active for programmers with a disability, speech impediments or non-native English speakers.
- Used GitHub for version control, Continuous integration (CI) and handling Pull Requests.

Facebook/react | *JavaScript*

2023

- Contributor to React library. Fixed a high-priority bug where users were unable to build the developer tools for React and thus not being able to debug React.

Education

University of Northern British Columbia

Jan. 2020 – Apr 2023

Bachelor of Science in Computer Science and Mathematics, GPA: 4.18/4.33

Prince George, BC, Canada