Nischal Shrestha

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EDUCATION

Carleton University   Ottawa, ON
Computer Science Software Engineering Stream B.C.S. Honours - (CGPA: 10.29/12)   *Sep. 2022 – Present*

EXPERIENCE

Undergraduate Teaching Assistant - Calculus and Linear Algebra   Sept 2023 – Present
Carleton University   *Ottawa, ON*

- **Improved students' understanding** of complex mathematical concepts, resulting in a **20% increase** in class test scores, by providing clear explanations and tailored **one-on-one support** during office hours.
- **Enhanced learning outcomes** for over 200 students by creating **detailed practice problems** and **leading interactive review sessions**, as measured by **positive student feedback** and higher assignment completion rates.
- **Streamlined the grading process** by reviewing and providing **constructive feedback** on assignments and exams, ensuring a **10% faster turnaround** time while maintaining **consistency and fairness.**

Private Coding Tutor   Feb. 2021 – Jul. 2022
                                                                                                                      Toronto, ON

- **Taught programming concepts** to High school students, focusing on languages like **Python** and **Blockly** to build a strong foundation in coding.
- **Designed personalized lessons** and activities to match each student's skill level, ensuring they could confidently apply coding concepts to real-world projects.
- **Improved students' coding skills** through **one-on-one guidance**, resulting in increased engagement and understanding of programming fundamentals.

PROJECTS

TrackMyAmazon | *Next.js, TypeScript, Bright Data, MongoDB, Cheerio,*   December 2023 – January 2024
                          Cron Jobs, Nodemailer, Tailwind CSS, Headless UI

- Developed an **Amazon product scraping platform** using **Next.js** with **TypeScript** for API routes and **MongoDB** for database storage.
- Implemented **product scraping features** using **Bright Data** and **Cheerio** to parse pricing, availability, and product details.
- Automated data updates with **cron jobs** to ensure real-time scraping and notifications.
- Integrated **Nodemailer** to send email alerts for price drops and stock updates
- Designed a responsive **frontend** with **Tailwind CSS** and **Headless UI** for a seamless user experience

AlgoVis | *C++, SFML*   May 2023 – Nov 2023

- Developed a **visualization tool for algorithms** showcasing sorting algorithms (**Insertion Sort, Shell Sort, Gnome Sort**) and pathfinding techniques (**BFS Pathfinder, Flood Fill**).
- Implemented **interactive features** such as custom-sized arrays, speed adjustment, pause, and resume for enhanced usability.
- Optimized **real-time performance** to address UI lag and memory usage issues with large data structures.
- Documented the project with a **comprehensive user guide** and planned future features, including support for graph and tree algorithm visualization.

TECHNICAL SKILLS

Languages: Java, Python, C/C++, SQL (Postgres), JavaScript, HTML/CSS
Frameworks: Next.js, Tailwind CSS, Flask, SFML
Developer Tools: Git, Docker, TravisCI, VS Code, Visual Studio, IntelliJ
Libraries: TypeScript, Bright Data, Cheerio, Nodemailer, Pandas, NumPy, Matplotlib

ACHIEVEMENTS

Dean's Honour List : 2022/2023, 2023/2024
Ewe Setacie Scholarship : 2024/2025