

Peter Vu

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EDUCATION

Computer Science, B.C.Sc., Honours, Mathematics & Film Studies Minor

University of Manitoba

- GPA: 4.36/4.5

EG: Dec. 2027

Winnipeg, MB

TECHNICAL SKILLS

Languages: Python, JavaScript, TypeScript, HTML, CSS, SQL, Java, C, C++, R, Bash, GDScript

Frameworks/Libraries: Next.js, React, Astro, Express, PostgreSQL, Prisma, Flask, NumPy, OpenCV, TensorFlow

Developer Tools/Other: Docker, Git, GitHub, Linux, CMake, Markdown, LaTeX, Neovim, RStudio

WORK EXPERIENCE

Freelance Web Developer

Dec. 2024 - Present

Hanoi - Amsterdam High School for the Gifted

Hanoi, Vietnam (Remote)

- Migrated 10+ Next.js components, layouts and pages into Astro for static site generation and comfortable DX
- Utilized Conventional Commits, Git branching and rebasing for a self-documenting and easily revertible changelog
- Leveraged AI agents such as v0 and Cursor for coding and system design assistance, enabling efficient development

PROJECTS

To Do List | *Express, Node.js, JavaScript, PostgreSQL, Prisma, Docker*

- Developed a Dockerized full-stack to do application with Node.js, Express.js, PostgreSQL, and Prisma ORM
- Implemented JWT authentication and bcrypt for secure user registration, login, and CRUD actions
- Created a responsive frontend with HTML, CSS, and JavaScript with the fetch API for managing todo tasks

Image Compression | *Flask, NumPy, Pillow, Python, JavaScript*

- Developed an image compression application using Flask, enabling users to upload images and adjust quality
- Implemented a custom SVD algorithm in NumPy to compress images, achieving efficient image size reduction
- Integrated asynchronous JavaScript for form submissions, dynamically updating the page with compressed images

EITC Navigator | *JavaScript, HTML, CSS, JSON*

- Managed a team of 5 first years, introducing them to collaborative tools such as Trello, Git and GitHub
- Implemented Dijkstra's algorithm in JavaScript for optimal pathfinding across multi-floor building layouts
- Created comprehensive room database with manually collected metadata assisted by Processing and Java scripts

WORK EXPERIENCE

Teaching Assistant and Grader

Sep. 2024 - Present

Department of Computer Science, University of Manitoba

Winnipeg, MB

- Instructed 30+ students on systematic program design with live coding demonstrations and empathetic mentorship
- Evaluated 130+ Python programs of varying styles, providing detailed feedback and debugging breaking code
- Achieved 86% above-average ratings for teaching effectiveness and attained 320% grading efficiency for tests

Undergraduate Research Assistant

Sep. 2024 - Present

Human-Computer Interaction Lab

Winnipeg, MB

- Architected a chapter on advanced linked lists with practical explanations and 10+ examples of varying difficulty
- Evaluated and revised 30+ exercises in a beginner Java workbook, improving their clarity and effectiveness
- Specified various content suggestions, ensuring accessibility for different programming backgrounds such as Python

Undergraduate Research Assistant

May 2024 - Aug. 2024

Geometric, Approximation & Distributed Algorithms Lab

Winnipeg, MB

- Conceived 10 new results with 20+ pages of mathematical proofs for new territory in the pursuit-evasion field
- Synthesized a significant proof built on 10+ lemmas for the lower bound of the underexplored series-parallel graph
- Collaborated with lab members in weekly meetings to iterate on several famous computational geometry problems