Vu Cao

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WORK EXPERIENCE

Carleton University

Teaching Assistant - Computer Science Sep 2024 - Present

- Conducted interactive tutorial sessions for COMP 1405, simplifying Python concepts and supporting students' comprehension of course material.
- Hosted office hours to provide personalized guidance, address technical questions, and assist with assignments, ensuring students' academic success.
- Partnered with professors to optimize lecture delivery by creating illustrative code examples and designing comprehensive test cases.

EDUCATION

Carleton University

B.Sc. in Computer Science, Honours Program - 3.95/4.00 GPA Sept 2023 – Present

PROJECT

jarvis.diy Jan 2025

- Built with Blackberry QNX as part of uOttaHack 7 (400+ participants)
- Developed an integrated solution combining hardware, backend, and frontend technologies to create a cost-effective alternative to 360 cameras, achieving a 95% cost reduction ($20 vs. $400).
- Adapted research papers on Gaussian Splatting, utilizing CUDA GPU processing and neural networks to train computationally efficient 3D models, achieving a 90% size reduction (20MB vs. 200MB)

Walk in the Park Apr 2024

- Achieved Best AI in Education Hack in GenAI Genesis 2024 (out of 250+ participants).
- Utilizes React Native, Gemini, and Google Maps to build a gamified mobile application, working with sponsors to encourage interaction, awareness and contribution towards local communities.
- Developed RESTful APIs to optimize the efficiency of incoming/outcoming requests to the backend by 70%.

TRACY: Tennis Realtime Analysis Coaching Feb 2024

- Achieved 3rd Best Hack in QHacks 2024 (out of 200+ participants).
- Developed a fullstack application, including an accessible and responsive React frontend for real-time tennis analysis and coaching.
- Tracks and calculates rapid projectile movements in 3D space from a monocular viewpoint with up to 97% accuracy, by implementing computer vision algorithms powered by OpenCV and TensorFlow.

Audio Processing Research Paper Jun 2022 - Jan 2023

- Investigated the effectiveness of Fourier analysis in its applications with audio processing.
- Utilized research methods and linear regression to analyze the relationship between automatic music transcription algorithms and their time windows/activation levels.
- Awarded the IB diploma for completing the Extended Essay.

SKILLS

- Languages: C/C++, Python, Java, JavaScript, Processing, HTML, CSS, CUDA, WebGL, MySQL
- Libraries and Frameworks: OpenCV, TensorFlow, Keras, PyTorch, Node, React, React Native, Flask
- Technologies: Linux, Git, QNX, Android Studio, AWS, Docker, Shell Scripting, MongoDB, REST APIs