Frank van Paassen

As a software engineering student, I am an enthusiastic and dedicated individual with a keen interest in computer vision. Beyond my dedication to academics, I also prioritize a healthy and active lifestyle through cycling, hiking and soccer.

Contact

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Personal Website

EDUCATION

McMaster University
Bachelor of Applied Science (Computer Science)

September 2023 - Present
- Relevant courses: Linear Algebra, Calculus, Introduction to Computational Thinking
- Mac RoboMaster: Collaborating with the team to integrate reinforcement learning and improving the current computer vision model

Kingsville District High School
September 2019 - July 2023
- 98% average in grade 12
- Awards: Attained top averages in Computer Science, Computer Engineering, Calculus, Chemistry, Physics and French.
- Achievements: Ranked top 25% in Canadian Computing Competition, and top 33% in Euclid. Secured 5th place in Windsor Secondary School Programming Competition.
- Math club, Karate (100+ volunteer hours), Jack Miner Bird Sanctuary event helper

EXPERIENCE

Software Development Engineer Co-op
Ecoation Innovative Solutions, Ruthven Ontario
June 2022 – September 2023 (4 months)

- Integrated TensorRT optimizations into a custom computer vision model, achieving a 300% increase in inference speed while maintaining accuracy
- Developed a system for greenhouse rail systems which calculates and displays greenhouse rail tilt in a heatmap based UI, aiding supervisors in swiftly identifying and mitigating safety hazards
- Designed a health check system for robotic components, enabling real-time malfunction alerts.
- Created a responsive user-friendly UI that allows users to easily filter and view robot-captured images.
- Tools used: Python, C++, SQLite, Google Cloud Buckets, Firestore, Docker, Bash

Projects

Math Solver
- Developed and implemented a robust math solver application capable of accurately recognizing and solving mathematical equations from user-provided images
- Designed and implemented a custom parser that effectively interprets the extracted mathematical symbols, and converted them to a suitable format for solving
- Tools used: Python, React, TypeScript, Computer Vision, HTML/CSS

EigenSight Engine
- Utilized Yolov8, complemented by a meticulously crafted synthetic dataset that simulates real-world challenges like rotations, messy handwritten and poor image quality to height accuracy.
- Intuitive Kivy UI backed by a robust FastAPI, with ongoing Azure integration for enhanced scalability.
- Tools used: Python, FastAPI, Numpy, Ultralytics, Computer Vision, Kivy