

Sunny Yao

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EDUCATION

McMaster University

Hamilton, Ontario

BASc, Software Engineering

Present

- GPA 3.95, Concurrency, Databases, OOP, Computer Architecture, Data Structures and Algorithms

TECHNICAL SKILLS

Programming Languages – Python, Java, C, C++, Bash, SQL, Verilog, R, Javascript, CSS, HTML

Frameworks/Libraries – Pandas, Selenium, BS4, Matplotlib, Mediapipe, OpenCV, Scikit,

Tools/Technologies – Git, Unix, MongoDB, Flask, React Native, Maven, Quartus, Autodesk Inventor

WORK EXPERIENCE

TS Tech Canada Inc.

Newmarket, Ontario

Engineering Co-op Student

May, 2022 – Sept, 2023

- Specializing in mechatronics engineering for industrial automation
- Performed 3D structural design in Autodesk Inventor to spec, budget and build 6 workstations
- Programmed Keyence IV3 Series Cameras for industrial use in a headrest guide inspection station
- Simulated Yaskawa collaborative robots using MotoSim software to verify cycle time
- Presented design solutions, timelines and budgets to senior management
- Project lead for 3 separate projects with budgets totaling \$81,000 USD

PROJECTS

Computer Vision Virtual Mouse (Python)

- Used Google's MediaPipe library for human hand landmark position tracking
- Trained to recognize hand gestures in a webcam feed to control a mouse peripheral
- Used OpenCV for importing and processing live video feed in consistent 30 frames per second
- 3rd place in Student Life Network's Remarkable Students Showcase with

Conversational Large Language Model - Funhouse Bot (Python)

- Automatically scraped and cleaned over 100,000 conversational messages with context from Discord
- Trained 2 conversational LLMs using anonymized conversational data using Google Colab GPU
- Deployed to huggingface.co at <https://huggingface.co/Stratum/FunhouseBot>

Exploratory Data Analysis (Python)

- Leveraged Selenium and BeautifulSoup (BS4) to automate web scraping processes
- Employed the Pandas library for comprehensive data manipulation, cleaning, and transformation tasks, facilitating in-depth exploratory analysis and insights generation.
- Utilized Scikit-learn for implementing machine learning algorithms, including regression models
- Employed Matplotlib to create insightful visualizations, mainly histograms and scatter plots
- Augmented analysis with statistical testing and inference using the R programming language

Discord Bots (JavaScript, Python)

- Created 24/7 uptime bots that monitors and records server messages for data analysis
- Maintained remote backups for several hundred thousand messages

DeltaHacks Hackathon - NoteShare Website (JavaScript, CSS, HTML)

- Website that offers file hosting and course exploration to share notes and class resources

FRC Robotics Programming and CAD Subteams (Java)

- Competed in 4 FRC tournaments over the course of 2 years on programming and CAD sub teams
- Interfaced with VEX robotics motors and built programs with Maven
- Engaged in iterative design processes, utilizing CAD software to create precise robot designs

AWARDS

- AP Scholar Award
- McMaster Faculty of Engineering Award of Excellence
- McMaster Dean's Honour List