Peterson Guo

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EDUCATION

University of Waterloo — Waterloo, ON
Honours Electrical Engineering, BASc, Specialization in Artificial Intelligence (cGPA 3.74/4.0) — *08/2023 – Present*
- **Coursework:** Object Oriented Programming, Linear Circuits, Digital Circuits and Systems, Electricity and Magnetism
- **Extracirriculars:** Data Science Club, Waterloo Formula Electric - Firmware, Electrical

TECHNICAL SKILLS

Languages: C/C++, Python, VHDL, Java, JavaScript, Typescript, C#, Bash, Terraform, HTML/CSS, Dart

Frameworks/Libraries: Tensorflow, NumPy, Docker, Spark, Pandas, Node.js, Flask, FastAPI, Django, React.js, Vue3

Databases/Cloud: AWS, Google Cloud, Azure, Snowflake, MongoDB, PostgreSQL, MYSQL, Redis, Vercel, Firebase

EXPERIENCE

Security Developer — 01/2024 – 5/2024
eSentire — *Remote*
- Developed a threat analytics dashboard that significantly boosted engagement through enhanced data visualization and automated reporting, becoming a key project and driving strategic adoption of advanced analytics.
- Automated data entry using a JSON-to-database conversion function, improving its speed by over **50%** by implementing recursion and efficient data structures.
- Automated deployment processes across **4** major projects, reducing manual operation by approximately **30%** through the use of infrastructure as code and CI/CD practices.
- Dramatically enhancing data processing speed of logging functions by over **400%** by using data structures and algorithms and list comprehension.
- Enhanced the logging and security protocols for multiple projects by implementing **3** standardized methods to ensure robust access control and system monitoring.
- Developed an open-source, multi-threaded GUI PCAP scrubber, adding over **10** functionalities such as multiple instances, text editing, automatic checksum validation, autosave, and find and replace to enhance user experience.

Simulation Developer — 06/2023 – 09/2023
COBWEB, University of Toronto — *Toronto, ON*
- Developed **4** new simulation models such as particle physics, computer vision, and spring-mass systems using OpenCV, NumPy, and Python.
- Maintained a genetic algorithm for health-related research simulation models using Java, achieving a **15% reduction in memory usage** and a **10% increase in processing speed** by improving multithreaded performance.

Full Stack Developer — 05/2023 – 09/2023
Broadcast Fantasia — *Markham, ON*
- Developed and maintained custom Shopify apps, enhancing e-commerce functionality and improving user experience as measured by a **30%** increase in user satisfaction scores.
- Delivered high-quality solutions on time and within budget by collaborating with cross-functional teams, including designers and project managers, as evidenced by timely project completion.
- Conducted thorough testing and debugging, reducing app errors by **20%** as measured by improved performance metrics
- Implemented and maintained integrations with third-party APIs, boosting app capabilities as measured by increased feature adoption rates.

Software Engineer — 05/2022 – 06/2023
Trubotics — *Markham, ON*
- Catapulted the competition ranking from 135th to 31st by engineering competitive autonomous strategies using torque sensors, motors, and gyros with algorithms optimized for real-time processing such as pathfinding and PID.
- Accomplished a **25%** reduction in error rates, as measured by thorough testing and debugging of software modules, by creating software tests and rigorous debugging protocols.

PROJECTS

InvestIQ — 05/2024 – 05/2024
- Used **LSTMs** and **neural networks** to fit data from historical stock prices to determine the next day's closing price, accurately predicting the closing price within **2%**.

Sentiview — 01/2023 – 10/2023
- Developed a web scraping tool which processed over **10,000** reviews, contributing to a **25% improvement** in customer satisfaction by extracting reviews from Google Maps with Python and BeautifulSoup, using Cohere for **NLP** analysis.

Assisted Reader — 10/2022 – 09/2023
- Integrated text-to-speech conversion for aiding vision disabilities through the development of an **OCR system**, using Tesseract, ESP32 camera, and autocorrect technologies.

MindBridge — Major League Hackathon Winner — 02/2024 – 02/2024
- Worked on the backend, creating authenticated endpoints for the application to access user data from a database

ACADEMIC PROJECTS

Bionic Evo — 09/2023 – 11/2023
- Engineered a prototype of a humanoid arm for amputees utilizing STM32 and EMG sensors, integrating **convolutional recurring neural networks** for precise gesture classification and arm control.

Malevolent Uses of Data Science and Ethical Concerns in the Age of AI — 09/2023 - 11/2023
- Researched the malicious uses of AI on cybersecurity and new emerging threats on LLMs.