Felix Zhou

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Education

The University of Western Ontario — London, ON
Honours Specialization in Computer Science, Major in Mathematics — *Sept. 2023 – Apr. 2027*

Experience

InnovOak — Feb. 2023 – Present
Co-Founder — *Markham, ON*

- Spearheaded and directed the planning and development process of the Active Quest fitness app, ensuring a seamless and successful implementation by directing a team of over **20** developers from inception to completion, which resulted in a **30%** increase in project completion rate.
- Built a robust and scalable architecture for the Active Quest platform by integrating MySQL as the database management system, enabling efficient and reliable storage and retrieval of data to deliver a seamless user experience.
- Implemented real-time data updates through advanced WebSocket technologies within Active Quest, increasing user engagement and interaction by **100%**, allowing users to receive instant and dynamic updates, enhancing their engagement and interaction with the app.

Projects

Phish Net - Ignition Hacks V4 | *Python, PyTorch, Transformer, Numpy, Matplotlib* August 2023 – August 2023

- Fine-tuned the pre-trained RoBERTa transformer model to distinguish phishing emails from safe emails using the accuracy metric by first training the model and then evaluating the model.
- Used the PyTorch library to convert the training dataset from strings into tensors which could then be interpreted by the model.
- Improved the Phish Net model by using the AdamW optimizer to adjust the learning steps and learning rate, the final evaluation accuracy was **98%**.
- Implemented a Decision Tree algorithm to improve the accuracy of the predictive model from **85%** to **92%** using AUC, ROC, and the F1 score as metrics.

Number Reader Machine Learning Model | *Python, Tensorflow, Numpy, Keras* June 2023 – July 2023

- Developed a sophisticated image classification neural network model using Python, leveraging popular libraries like TensorFlow, NumPy, Matplotlib, Keras, and OpenCV for implementation and achieving highly accurate results.
- Utilized NumPy and OpenCV for dataset preprocessing, encompassing resizing, normalization, and data augmentation. Enhancing the neural network's input quality and reducing the potential for overfitting.
- Utilized TensorFlow's flexible options for hyperparameter tuning, such as learning rate, batch size, and number of epochs. Conducted systematic experimentation to optimize the model's performance while avoiding common issues like vanishing gradients or exploding gradients. The model's final accuracy as a result of fine-tuning was **98%**

Unity ML Model | *Python, C#, PyTorch, CUDA* Nov 2019 – Dec 2019

- Developed Unity ML-Agents models using Python and Unity's ML-Agents toolkit, implementing reinforcement learning techniques and optimizing neural network architectures to achieve significant improvements in agent performance.
- Fine-tuned hyper-parameters and designed effective reward and punishment mechanisms within the framework of reinforcement learning, resulting in a notable enhancement in agent performance compared to baseline models.
- Leveraged PyTorch for neural network development and conducted rigorous experimentation, resulting in a substantial boost in accuracy metric to an impressive **86%** within the Unity ML-Agents environment.

Technical Skills

Languages: Java, Python, MySQL, JavaScript, HTML, CSS
Developer Tools: Git, Github, Atom, Google Cloud Platform, VS Code, Visual Studio, PyCharm, IntelliJ, Eclipse, Android Studio, CLion, MySQL Workbench, Command Prompt
Libraries: Tensorflow, Matplotlib, Keras, NumPy, PyTorch, OpenCV
UI/Design: Photoshop, Pixlr, Figma, Canva
Frameworks: Node.js, Bootstrap, Express.js