Taeyang (Dennis) Kim

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Education

University of Toronto 2021-2024

Honours Bachelor of Science, Computer Science, Co-op
Relevant Courses: Software Tools & Systems Programming, Machine Learning and Data Mining
International Student Ambassador

Skills

Languages: Python, Java, C, C++, JavaScript, Bash

Technology/Frameworks: HTML,CSS,React, Node.js, SQL, PySpark, DAX queries, Tensorflow PyTorch, HuggingFace, Scrum, Android (Java), JUnit, Mockito,AWS Git, OpenCV, Power BI, Gymnasium, Pygame, MIPS, PyTorch

Experience

Korea Advanced Institute of Science and Technology Aug 2020 - Jan 2021
Research Intern

- Trained a convolutional neural network, working heavily with **PyTorch** and **Anaconda**, allowing the model to classify images with an accuracy of 86.7%
- Extended the model using **OpenCV** to enable real-time face recognition for autonomous car test
- Responsible for the data plotting feature using **Python**, an important component of the project that enabled the analysis of the effect of epochs in machine learning

Ministry of Education May 2023 - Present
Application Programmer Analyst

- Utilized **SQL** and **DAX queries** to design and develop data visualizations and manipulations, resulting in a significant reduction in monthly report generation number, from 45 to 23
- Created a machine learning model using **PySpark** and **Python** to predict private cost audit tuition fees, providing estimates for 400,000 applications
- Collaborated with stakeholders using **Power BI** to summarize OSAP applications across academic years, amounting to a total of 4.7 billion in tuition fees

Projects

Snake Game AI August 2023

- Designed a CNN-based reinforcement learning model in **Python**, utilizing **TensorFlow** and **OpenAI Gymnasium** to empower agents to navigate complex gaming environments
- Trained model in a custom Snake game using **Pygame**, optimizing decision-making with the three most recent frames, achieving a high score of 14 points

Push up Counter May 2023

- Utilized **Python** alongside **YOLO** to estimate pose and develop a real-time push-up counting system, allowing dynamic fitness tracking in video streams
- Applied **OpenCV** to process live streaming and recorded videos, enabling accurate push-up detection in real-time

Platform Game April 2023

- Developed a platform game featuring three distinct stages, programmed in **MIPS** assembly language, incorporating gravity mechanics for an immersive gaming experience
- Incorporated health and score systems, along with the addition of double jumps, to enhance the gaming experience across three distinct stages

Course Offering Calendar Android App August 2022

- Used **Gradle** and **Java** to create a course calendar Android app that considers prerequisites and session offerings, with **Git** for version control
- Implemented Real-time **Firebase** and **SQLite** to enable real-time updates of user-generated data for all other users of the application
- Utilized **Mockito** and **JUnit** to facilitate unit testing, which allowed for fast development of the program and improved code quality
- Conducted **Scrum** meetings as Scrum master and used **Jira** to keep track of the user stories to allow better communication and collaboration

Movie Web Service August 2021

- Employed **React** and **Axios** to build a fast, static website that could easily synchronize data with the server
- Utilized **HTML, CSS,** and **JavaScript** for the front end to display movie details obtained using YTS API