Artin Molaei-Forouhar

416-576-1692 | artinmolaeiforouhar@gmail.com | artins-portfolio.netlify.app | github.com/MistyGH

Education

University of Toronto, St. George Campus — Toronto, ON
B.A.Sc in Computer Engineering & PEY — *Sep. 2022 – Present*

Current Status: — CGPA: 3.95
Second-year undergraduate student — *Expected graduation year: 2026*

Projects

Fruit Ripeness Detection | *Python, PyTorch, Matplotlib, CNNs, Transfer learning, UofT* — *May 2023-Aug 2023*

- Developed a data processing script that processes images, applies augmentations for insufficient data, and adds them to test/validation lists with labels.
- Conducted extensive hyperparameter tuning on various types of CNN architectures, batch size, learning rate, and number of epochs to ultimately achieve a testing accuracy of 87%.
- Analyzed model results on a qualitative level by isolating results across fruit category and ripeness level.

Hand Gesture Recognition | *Python, PyTorch, Matplotlib, CNNs, Transfer learning* — *May 2023-July 2023*

- Designed and implemented a high-performance Convolutional Neural Network (CNN) architecture utilizing convolutional, pooling, and fully connected layers.
- Utilized backpropagation with a cross-entropy loss function and SGD with momentum optimizer to train the CNN model effectively.
- Incorporated transfer learning by leveraging pre-trained parameters from the torchvision AlexNet model, enhancing the testing and validation accuracy of the original CNN to surpass 97%.

Engineering Strategies and Practice I & II | *Fusion 360, Project Management* — *Sep 2022-April 2023*

- Managed and coordinated ESP I & II projects, ensuring successful completion of necessary deliverables.
- Modeled a 3D prototype of a redesign for Sidney Smith building's east facade.
- Designed a precise 3D model for a wooden bridge for implementation at Bruce's Mill Conservation Park.

BioBlender | *Android Studio, Chaquopy Python SDK, UofTHacks X, Serp API, OpenAI* — *December 2022*

- Co-developed an android app that generates a unique animal using algorithms involving Openai API to help process the traits & characteristics of two input animals, and then outputs a resulting image using Serp Api.
- Diligently distributed tasks within the 36 hour time constraint, and synchronized progress using Git.

Rubik's Cube Program | *Java* — *April 2022-June-2022*

- Developed a program that allows users to interact with a virtual Rubik's cube in a 3D environment.
- Utilized various 2D Java libraries and advanced mathematical & programming algorithms to create an immersive 3D space. Project is available at: https://artinmolaeiforouhar.itch.io, along with another game I made.

Experience

Sales Associate — August 2022 – September 2022
Canadian Tire — *Richmond Hill, ON*

- Engaged with customers, understood their needs, and provided knowledgeable assistance in selecting the right houseware products.
- Demonstrated efficient inventory management by receiving, unpacking, and labeling merchandise, and accurately updated stock records.

Programming Lead — October 2021 – June 2022
Alexander Mackenzie High School Robotics Club — *Richmond Hill, ON*

- Led Java development for the club's programming division, overseeing all aspects of the Robot's programming.
- Self-studied the FIRST Robotics Competition Control System and taught members Java, Visual Studio Code, and WPILib, while managing and supervising the programming team, ensuring effective execution of tasks.

Technical Skills & Certifications

Languages: Java, Python, C#, C, C++, HTML/ CSS/ JS, Matlab, React, Verilog (Modelsim, Quartus, and FPGA)
Tools: Git, Fusion 360, Google Colab, Visual Studio Code, IntelliJ, Eclipse, Unity, Filmora, Android Studio
Libraries: Pandas, NumPy, Matplotlib, PyTorch, PyGame, Tensorflow, VS-WPILIB, Pillow
Certifications & Awards: Certified Java Developer, Distinction in CCC Senior Div, CS Award (Top Student Gr.12)