Artin Molaei-Forouhar

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EDUCATION

University of Toronto, St. George Campus   Toronto, ON
Bachelor of Computer Engineering & PEY   *Sep. 2022 – Present*

Current Status: CGPA: 3.94
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 2023-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 2023
- 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, HTML/ CSS/ JS, Matlab, React
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)