Avid Eslami

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Education

- **University of Toronto** — Toronto, CA
  *Bachelor of Applied Science in **Computer Engineering*** — *Sep. 2021 – Present*
  - **ESC180**: Intro to Computer Programming
  - **ESC190**: Computer Algorithms and Data Structures
  - **ECE243**: Computer Organization
  - **ECE244**: Programming Fundamentals
  - **ECE297**: Software Communication and Design
  - **APS360**: Applied Fundamentals of Deep Learning

Experience

- **MLDSAI Inc.** — Toronto, CA
  Machine Learning Engineer Intern — *May. 2023 - Present(Aug. 2023)*
  - **OpenAdapt**: Worked on the OpenAdapt project which focuses on creating an open source tool for process automation through transformers.
    - **RWKV**: Implemented and rigorously evaluated **LLM's** then **finetuned** them through the **HuggingFace** interface to elevate their performance on sophisticated tasks.
    - **ChromaDB**: Setup a vector database and researched novel methods for determining the number of closest results.
    - **Software**: Created several API / software tools with **Python** to be used during process replays. Tested various components to ensure optimal functionality through rigorous testing and refinement.
- **UofT Aerospace Team - Unmanned Aerial Systems** — Toronto, CA
  Model Predictive Contouring Control Team Lead — *Oct. 2022 - Present*
  - **Autonomous Drone Racing**: Learned how to interpret and create code pertaining to quad-copters in the ROS environment. Studied the basics behind state estimation and localization. Contributed to the implementation of a non-linear model predictive quad-copter control system using principles of numerical optimal control in **C++**.
- **SkateScribe** — Toronto, CA
  Research Assistant — *Jul. 2022 - Aug. 2022*
  - **End Mill Testing**: Developed a testing framework to gather data on improving the surface finish of blades sharpened on the SkateScribe mill. Researched mill properties to determine metrics for comparison. Modified spindle RPM and feed rate to analyze changes in performance. Discovered bugs in the SkateScribe interface and path **algorithm**.
- **Arshvid Technology** — Toronto, CA
  Software Developer — *Dec. 2020 - Aug. 2021*
  - **Green House Controller**: Developed a green house control system which allowed for remote monitoring and actuation of systems functioning within the greenhouse.
    - **Front-End**: Developed using **React.js** and **Bootstrap**. Displayed status conditions on the various elements of the greenhouse ranging from sump pumps to alarms.
    - **Back-End**: Developed using **Python** on a Raspberry Pi. Monitored 'General Purpose Input/Output' pin voltages to determine status of greenhouse operations, or activated certain pins based on requests sent from the front-end.

Software Projects + Awards

- **Terminal Competition Winner**: Participated and won 3rd place in the 2022-2023 competition from the Midwest region hosted by Citadel and Citadel Securities. The team won a total of **$3500 USD**.
- **GIS-YummyMap**: Developed a functional **GIS** application using the Open-Streets-Map database using **STL** in **C++**. Implemented **parralel multidestination Dijkstra algorithm**, **A***, and **2-Opt** to effectively solve the travelling salesman problem while mainting swift runtime.
- **TrackTC**: A Django and React web-app developed for the NewHacks hackathon. **Python** script taps into the network of the TTC Alert website, accesses live alert data, and emails specific users on a regular time interval.

Programming Skills

- **Languages**: Python, C/C++, C#, ARM Assembly, JavaScript, SQL, MATLAB, HTML
- **Technologies**: Git, HuggingFace, PyTorch, CUDA, NumPy, Unity, ROS, React, Node.js, ChromaDB, RWKV, MLAPI, FPGA/Intel Quartus Prime, ModelSim, NI MultiSim