JUSTIN **TRAN**

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Education

University of Toronto **September 2018 – June 2023(Expected)**
Engineering Science- Bachelor of Applied Science (BASc) Toronto, Ontario
Major: Machine Intelligence
Minor: Engineering Business

Courses Taken

Computer Science Data Structures and Algorithms **(A)**, Relational Databases **(A+)**, Systems Software **(A)**, Introduction to Machine Learning **(A)**, Artificial Intelligence **(A+)**, Digital and Computer Systems,
Mathematics Probability and Statistics **(A)**, Multivariable Vector Calculus, Discrete Math, Matrix Algebra & Optimization, Differential Equations, Linear Algebra

Experience

Ontario Teacher's Pension Plan – Solutions Engineering **May 2021-Present**
Software Development Intern Toronto, Ontario

- Designed and built Continuous Integration pipelines for automating the deployment of product changes using Jenkins, UrbanCode, Java, Python, and React
- Developed a Jenkins job to allow over 50 developers to easily modify the permissions of company databases through a User Interface
- Incorporated a git webhook to automatically deploy codebase updates when feature branches are merged to the master branch
- Implemented a notification system to send a Microsoft Teams message regarding the results of nightly continuous integration builds

UofT Machine Intelligence Student Team **January 2020 –September 2020**
Project Developer Toronto, Ontario

- Worked within a team of 8 to create a model which identifies house numbers from google maps street view
- Used TensorFlow and Keras to write one of the four neural networks which comprised the end model, as well as tested the neural nets of teammates through Tensorboard
- Product outperformed Convolution Networks in terms of image size scalability and computational requirement

Coding Projects

Deep Learning Fiction Writer **January 2021**

- Developed an AI-based WebApp which uses the beginning of a fiction story as an input and outputs a continuation of the story, using PyTorch, Flask, React, and Typescript
- Utilized transfer learning and the GPT-2 Transformer to train a model on a dataset of over 1000 fiction stories
- Model performed 120% better than baseline GPT-2 in generating fiction continuations according to feedback from 41 Users

Job Board **August 2020**

- Designed and created a WebApp using JavaScript and JS Frameworks which matches users with jobs based on their marketable skills.
- Used a MySQL server to store job data aggregated from Indeed.com, ZipRecruiter.com, and StackOverFlowJobs.com.
- Created the frontend of the webpage using React, CSS and HTML.
- Hosted a RESTful API sever with Express.js and ran backend services through Node

Chess, Chess Player **June 2020**

- Designed and programmed a 1300 ELO Chess AI using C++, as well as a full-stack fully functional chess desktop app complete with castling, enpassant, and unit promotion
- Applied the Min-Max algorithm with alpha-beta pruning to traverse possible future game states and identify an optimal move
- Leveraged **dynamic programming, multi-processing, hash tables** and the quicksort algorithm to reduce computational time of decision tree traversal by 1000%
- Depth 4 traversals are done in under 10 seconds, and depth 5 traversals are done in less than 1 minute

Autonomous EV Charger **January 2020**

- Worked in a team of three to construct a rover which identified charging ports on electric cars and inserted an electric car charger
- Used C++ to build a microcontroller to control the movement of the rover which utilized three Stepper motors and one DC motor
- Created an OpenCV script in Python and implemented it with a raspberry pi and a camera to detect the charging port and autonomously direct movement
- Learned how to communicate to technical processes and goals to those without a technical background

Leadership Experience

Phi Gamma Delta **June 2020 – June 2021**

Risk Manager Toronto, Ontario

- Responsible for enforcing fraternity and university bylaws, identifying and assessing risks, and maximizing safety while minimizing potential loses to the organization
- Implemented safety protocols to prevent Covid infections during events resulting in a 0% infection rate among all participants throughout my tenure
- Created action plans to guide organizations member actions for 10 different dangerous scenarios
- Mediated and resolved internal conflicts between members

CareGuard Team Lead **April 2019**

- Was the team lead in creating a device to help reduce intrusions in the resident rooms at the Fairview Nursing Home from residents with dementia
- Interacted with stakeholders such as the Nursing home staff, as well as residents, to create a solution which was effective while not limiting the freedom of the residents
- Used stakeholder input to create key objectives, as well as metrics and criteria to test the validity of design iterations as a solution
- Learned how to productively interact with stakeholders, and how to create and execute an action plan for delivering a demonstrable product in a constrained amount of time

Skills

Languages	Python, Java, C++/C, Web (HTML5/CSS3/JavaScript), Typescript, Verilog, Assembly (ARM)
Frameworks/Tools	Git/Github, Django, React, SQL, Node.js, Express.js, Windows, Linux, Unix
Machine Learning	TensorFlow, Keras, PyTorch, Transformers, Scikit-learn, NumPy, Pandas, TensorBoard