Faisal Hussaini

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Education

University of Toronto Sep. 2018 – Apr. 2022 (Expected)

BASc in Computer Engineering, Minor in Business, Certificate in Artificial Intelligence

- **Specializations:** Software and Computer Networks
- **Coursework:** Algorithms and Data structures, Operating Systems, Computer Organization, Databases

Projects

AI that plays Flappy Bird | *Python, Pygame, NEAT-Python* Aug 2020

- github/flappybird
- Implemented the game environment using the PyGame module.
- Used the Neuroevolution of Augmenting Topologies (NEAT) method to create neural networks of bird clones.
- Filtered the birds using natural selection, to achieve a perfect bird within **only 2 trials**.

Personal Website | *HTML, CSS, JavaScript, Bootstrap, Git* May 2020 - June 2020

- faisalhussaini.io
- Utilized HTML 5, CSS 3, JavaScript, Bootstrap 4, JQuery, Node.js, NPM, Git and a Google Cloud API to create this responsive site from scratch.

MyTour: A Tourist GIS similar to Google Maps | *C++, STL, Boost, GTK, Git* Jan 2020 – Apr 2020

- github/MyTour
- Designed a mapping GIS catered specifically towards tourists, using data procured from OpenStreetMaps. Used the GTK graphics package and Glade to create an interactive UI.
- Converted Djikstra's algorithm into A* to find the shortest route between two destinations, **optimizing pathfinding by 78%**.
- Solved a variation of the travelling salesman problem to compute the best possible route. Used multithreading and randomized two-opt to **optimize the algorithm by 85%**.
- Implemented a filtering system for POIs, Tourist and Leisure locations to **optimize the responsiveness of the GUI by 43%.**

Work Experience

Unplug Jan 2019 - Apr 2019

Design Engineer *Toronto, ON*

- Developed online surveys to gather consumer data and wrote technical narratives to document processes and conceptual design changes.
- Estimated quantities and cost of materials, equipment and labour to determine project feasibility.
- Conceptually designed a product that met the objectives and constraints originally posed, while **successfully increasing cost-effectiveness by 23% and coverage by 31%.**

Certifications

- **SQL for Data Science** | *UC Davis* Jul 2020
- **Neural Networks and Deep Learning** | *deeplearning.ai* Aug 2020

Technical Skills

- **Languages**: **(Proficient)**: C++, C, **(Familiar)**: ARM Assembly, SQL, HTML5/CSS3/JavaScript, Java, MATLAB, Python, Verilog
- **Frameworks**: Bootstrap, JQuery, Node.js
- **Libraries/Modules**: C++ STL, Boost, NumPy, Matplotlib, PyGame
- **Developer Tools**: Git, Google Cloud Platform, Netbeans, Brackets, Linux/Unix
- **Concepts**: Object Oriented Programming, Algorithms, Data Structures, Agile Development