# Faisal Hussaini

## Third Year Computer Engineering Student

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- **Linkedin:**
  - **linkedin.com/in/faisal-syed-hussaini/**
- **Personal Website:**
  - **faisalhussaini.github.io**
- **Github:**
  - **github.com/faisalhussaini**

## SUMMARY

Third-year Computer Engineering student with a background working effectively in dynamic environments. Experienced in object-oriented programming, hardware description languages and front-end web development. A well-organized and collaborative individual with strong communication and analytical abilities.

## WORK EXPERIENCE

**Unplug,** Toronto ON— *Design Engineer*
**Jan 2019 – Apr 2019**

- Worked in a team of six to design and propose an autonomous presence detection mechanism for the world's first AI-powered smart plug.
- 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%.

## PROJECTS

**AI that plays Flappy Bird** - **August 2020**
https://github.com/faisalhussaini/flappy_bird

- Used Python, PyGame and NEAT-Python to create AI that learns to play flappy bird
  - Implemented the game environment using the PyGame module.
  - Used the Neuroevolution of Augmenting Topologies (NEAT) module to create a neural network of bird clones with different weightings, and filtered them using natural selection.

**Personal Website** - **May 2020 - June 2020**
https://faisalhussaini.github.io

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

**MyTour: A Tourist GIS comparable to Google Maps**- **Jan 2020 – Apr 2020**
https://github.com/faisalhussaini/MyTour

- Designed a mapping GIS in C++ catered specifically towards tourists using data procured from OpenStreetMaps. Used the GTK graphics package and Glade to create an interactive UI. Used Git as a version control system.
  - Used STL and Boost to improve the program's runtime by 240%.
  - Optimized pathfinding by 78% by converting Djikstra's algorithm into A* to find the shortest route between two destinations.
  - 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%

## EDUCATION

**The University of Toronto,** Toronto ON — BASc in Computer Engineering
SEP 2018 - PRESENT

- **Specializations**: Software and Computer Networks
- **Minor**: Business
- **Certificate**: Artificial Intelligence
- **Example Coursework:** Algorithms and Data structures, Operating Systems, Computer Organization, Databases, Networks

## TECHNICAL SKILLS

- **Proficient:**
  - C++
  - C
  - Algorithms
  - Data Structures
  - Verilog
  - Git
  - Iterative Design Cycle
  - Agile Development
  - Linux
- **Familiar:**
  - ARM Assembly
  - SQL
  - HTML5/CSS3/JavaScript
  - Java
  - Excel
  - MATLAB
  - Python

## CERTIFICATIONS

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