Abhay Gopinathan

abhay.gopinathan@mail.utoronto.ca
linkedin.com/in/abhayg8/ github.com/abhayg8

Education

University of Toronto **Toronto, ON**
Bachelor of Applied Science in Computer Engineering *Sep. 2018 – Apr. 2023*

- **Past Courses:** Operating Systems, Algorithms and Data Structures, Digital Systems, Computer Organization
- **Current Courses:** Computer Security, Distributed Systems, Computer Graphics, Compilers and Interpreters

Experience

Software Engineer Intern **May 2021 – Jul. 2022**
Automotive Multimedia Team, Qualcomm *Markham, ON*

- Worked on **video driver** for **QNX** and **Linux Android** using **C**.
- Designed and developed **test application** to exercise **QNX** video driver that **increased code under test by 40%**.
- Improved **logging system** for **Linux Android** component that optimised debugging.
- Updated driver to **add support for new APIs** in collaboration with other teams.
- Designed and developed system using **Python and Bash scripts** to **automate driver tests** before promoting code.
- Created training materials and ran sessions to **train new developers** in driver architecture and test systems.

Summer Research Student **May 2020 – Aug. 2020**
Intelligent Sensory Microsystems Lab, University of Toronto *Toronto, ON*

- Debugged **Verilog code** for **image sensor** using RTL simulations and by **testing hardware**.
- Adapted firmware between different versions of image sensors and produced technical documentation.

UofT AI Conference Organizer **Sept. 2020 – Mar. 2021**
UofT AI Club, University of Toronto *Toronto, ON*

- **Collaborated with a team** of 10 students to organize an online artificial intelligence and **machine learning conference** with **2000 attendees**.
- Responsible for creating conference schedule, outreach to speakers and attendees, selling tickets, and marketing.

Projects

Vision Checker **MedHacks 2020**

- *Winner of the Google COVID-19 Hackathon Fund.*
- Created a scoring function, to calculate a user's visual acuity score based on audio files from **Google Cloud**, using **Python** and **Google's Speech-to-Text API**.
- Developed the front-end of a website that allows users to conduct eye tests at-home using **HTML, CSS, JavaScript, Boostrap,** and **Heroku**.

Maps GIS **Software Design and Communication Course**

- Built a **C++** program that provides navigational data using object-oriented design principles.
- **Created an API** for **OpenStreetMap** to extract data used for GIS.
- Utilised algorithms **(A*, 2-opt, custom algorithms)** to solve path finding problems.
- Implemented a **graphical user interface**, using **GTK** library.

Minesweeper **Computer Organization Course**

- Developed a **C** program that remakes Minesweeper for a **DE1-SoC board**.
- Used **memory mapped I/O**, a **VGA monitor**, and a **PS2 keyboard**.

Music Player **Personal Project**

- Developed a **Python** program to play music files and record audio clips.
- Created a **GUI** using **tkinter** and used **pygame** and **pyaudio** for sound processing.

Skills

Programming Languages: C, C++, Python, Verilog, Bash, HTML, CSS
Tools/Platforms: Linux, QNX, Linux Android, Xilinx Vivado, Intel Quartus, Git, Perforce, Google Cloud