Anshil Gandhi

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EDUCATION

B.Sc. in Computing Science and Mathematics — **University of Alberta** — **Sept 2017 - April 2021**

Relevant coursework: Compiler Design, Database Management, Operating Systems, Graph theory, GPU programming, Theory of computation, Computer organization and architecture, Algorithms and data structures, Reinforcement learning, Functional and logic programming, Multivariable calculus, Coding theory, Statistics.

EMPLOYMENT

Open Source Contributor — **LLVM Compiler Infrastructure** — **December 2020 - Contd.**
Part-time

- Testing the baseline hot-cold splitting pass by running firefox benchmarks.

Team Lead — **Canadian Organization of Undergraduate Health Research** — **June 2020 - Contd.**
Part-time

- Leading a team to develop an Android application to collect data from patients.

Software Developer — **NexOptic Technology** — **April 2020 - Aug 2020**
Student intern

- Implemented a Tensorflow based Image Signal Processor, which is an image pipeline of algorithms including bayer transformations and demosaicing, written in Python 3.
- Maintained and developed features for ALIIS™ on the Android platform in Kotlin.
- Developed a CMake build system for ALIIS™.

Software Developer — **NexOptic Technology** — **June 2019 - Aug 2019**
Student intern

- Developed an image streaming desktop application using dcraw, Spinnaker SDK, nuklear and OpenGL libraries, written in C++.
- Refactored ALIIS™ to process 720p video and improve frame rate by 50%, in C++.
- Implemented image file converters for PNG, TIFF and DNG in C++.

Student Intern — **University of Alberta** — **July 2016 - Aug 2016**
Full-time

- Implemented reinforcement learning environments for the game of 2048 and mountain car in Python 3.

Personal Projects

gazc is an LLVM-based compiler frontend for the Gazprea programming language, written in C++.
betterIR implements out-of-tree LLVM IR passes, written in C++.
ammoc is an LLVM-based compiler frontend for a Rust-like programming language, written in C++.
unixFS is a UNIX-based file system, written in C++.
mapReduce is a thread pool library for computing word count, written in C++.
Lianshell is a UNIX-based shell program, written in C++.
EulerTikz is an implementation of a force-based layout graph drawing algorithm, written in Python 3.

Awards

Open Kattis ranked 206 out of over 5000 problem solvers across the world
HackerRank 6-star gold badge in problem solving
Communitech's Code to Win challenge ranked among the top 75 coders across Canada
RMRC 2019 ranked third place in the ACM's regional programming contest out of 75 teams in the Rocky Mountain region
RMRC 2018 ranked 23rd place in the ACM's regional programming contest out of 65 teams in the Rocky Mountain region

Technical Skills

Programming Languages C/C++; Kotlin; Rust; Python; MIPS; X86; ARMv7; Lisp
Tools and frameworks Android; UNIX; Git; Firebase; SQL; MongoDB; CUDA