


# Anshil Gandhi

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## EMPLOYMENT

**Senior Software Engineer** **Advanced Micro Devices Inc.** **May 2021 - contd.**  
*Full time*

- ❖ Added builtin support targeting GCN intrinsics in clang.
- ❖ Implemented optimization remarks for FP atomics in the instruction selector.
- ❖ Synchronized HIP atomics with OpenCL atomics.
- ❖ Dealt with compiler regressions in open-source frameworks such as pytorch, rocFFT, rocWaves and onnxruntime.
- ❖ Contributed to passes including clang Sema, branch relaxation, instruction combiner, machine scheduler and tablegen files for codegen.
- ❖ Commits to LLVM trunk: <https://reviews.llvm.org/people/commits/20547/>

**Mentor** **Outreachy** **May 2021 - Aug 2021**  
*Part-time*

- ❖ Mentored an intern to implement GlobalISel instruction selector for the M68k backend in llvm.

**Team Lead** **Canadian Organization of Undergraduate Health Research** **June 2020 - March 2021**  
*Part-time*

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

**Software Developer** **NexOptic Technology** **April 2020 - Aug 2020**  
*Student intern* **June 2019 - Aug 2019**

- ❖ 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 ALIISTM on the Android platform in Kotlin.
- ❖ Developed a CMake build system for ALIISTM.
- ❖ Developed an image streaming desktop application using dcraw, Spinnaker SDK, nuklear and OpenGL libraries, written in C++.
- ❖ Implemented image file converters for PNG, TIFF and DNG in C++.

## EDUCATION

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

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

## PROJECTS

**gazc** is an LLVM-based compiler frontend for the Gazprea 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++.

**rustic chess** is a 3D chess application which uses the bevy ECS game engine, written in Rust.

**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 23<sup>rd</sup> place in the ACM's regional programming contest out of 65 teams in the Rocky Mountain region

## TECHNICAL SKILLS

**Programming Languages** C/C++; CUDA; Rust; Python

**Tools and frameworks** Android; UNIX; Git