

Software Engineer at Arm with over 2.5 years of experience in cutting-edge Compiler Technology and an Excellent academic record with a master's degree from a top-tier UK university. Customer-oriented and a proud team player focused on achieving results.

Education:



Imperial College London

Oct 2014 - July 2018

MEng Electronic and Information Engineering (EIE) - Graduated with Upper class 2:1 (68%)



Indian School Muscat (Equivalent to UK GCSEs + A-levels)

May 2010 - May 2014

Class XII – CBSE Board – 97% (3rd highest percentage in Gulf countries. Top 5% in CBSE)
Also passed IIT - JEE Mains, SAT 2 – 2400/2400

Work Experience:



Compiler Engineer (Development and Solutions Group)

Jan 2021 - Present

Work in the Arm's HPC Compiler Product Team: Arm Compiler for Linux (ACfL)
Responsibilities include (but not limited to):

- Open-source contributions to LLVM for upstream work
- Updating/bug fixing for compiler optimizations

Also briefly worked on Arm's compiler for embedded, writing optimizations for Arm M-profile vector extension (MVE).
[link](#) to related open-source contributions to LLVM.



Software Engineer (Architecture and Technology Group)

Mar 2020 - Jan 2021

Graduate Software Engineer

Oct 2018 - Mar 2020

Worked in a team that maintains an executable software model (written in a custom language) of the Arm Architecture Reference Manual (Arm ARM).

Responsibilities included (but not limited to): Maintaining transpiler's C++ backend, compiler optimizations, fixing defects, writing unit tests, changing tool according to language specification updates.



Software Development Intern (Architecture and Technology Group)

April - Sept 2017

- Successfully assessed feasibility of using LLVM for compiling Arm's Architecture Specification Language. Involved investigation into LLVM C++ API to assess whether existing transformation could be re-written using LLVM.
 - Increased run-time speedup by 1.45x by extending Global Integer Range Analysis compiler optimization. Project overview can be found [here](#).
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Projects:

- **Compiler for C90 language** (Jan-March 2016)
Built a C90 compiler (in C++) through Lexing, Parsing and Target CodeGeneration for the gnu-mips ISA. Involved making OOP classes for program constructs in the C90 Grammar specification, then making an AST and directly producing MIPS Assembly (required understanding of MIPS ABI) code while traversing the AST.
 - **Master's project: Drone State Estimation and Navigation using IP cameras** (Oct 2017-Jun 2018)
Successfully designed and implemented a cost-effective and complete system for real-time state estimation and navigation of a Parrot A.R. Drone using multiple (external) IP cameras and LEDs in visible spectrum. Project details can be found [here](#).
 - **Machine Learning Research (graduate rotation in Arm Research, Oct 2019-Feb 2020)**
Explored Bayesian methods for Predictive Uncertainty Estimation in Neural Network to make network say "*I know*" or "*I don't know*" when it is uncertain about an input. Involved literature survey on Bayesian methods (MCDropout, GPDNN, BNN) and prototyping a basic solution using entropy values.
 - Some other projects: [Monte-Carlo Localization Robot \(Python\)](#), [MIPS CPU simulator \(C++\)](#), [Cache Simulator \(C++\)](#)
 - Coursera Certifications: [Google Cloud Fundamentals](#), [Functional Programming in Scala](#), [Functional Program Design in Scala](#)
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Skills and Hobbies:

- Programming Language skills: C++ (Advanced), Python, Scala, OpenCL, Verilog, Matlab, SQL.
- Frameworks: Tensorflow, PyTorch, AWS, GCP, OpenCV, ROS, Android, Jenkins, Git, Gerrit, Docker
- Language skills: Fluent in English and Hindi. Basic knowledge of Spanish.
- Hobbies: Football, Badminton, Swimming, table tennis, Chess (also tutored), singing.