

DHRUV MAKWANA

Personal Profile

Languages: English, Gujarati, Hindi

Current Location: Wellington, NZ

Website: cst.cam.ac.uk/dcm41

References: Dr. Neel Krishnaswami, Prof. Peter Sewell

M.ENG IN COMPUTER SCIENCE (WITH
PSYCHOLOGY)

TRINITY COLLEGE, CAMBRIDGE: 2014 - 2018

Employment History

Oct 2020 – Present | Youth Ambassador, Key Contributor | Aurelius Foundation

- Speaking at seminars on Stoic topics
- Creating videos and articles for social media
- Developing new products

April 2020 – Present | PhD Student in Computer Science | University of Cambridge

- Teaching undergraduates various Computer Science courses (since Oct 2018)

June 2018 – March 2020 | Analyst (Software Developer), SecDB Architecture | Goldman Sachs, London

- Re-implementation of Slang: [talk at Curry On \(2019\)](#)
- Intern training: Java 8, React/Redux and Slang/SecDb and project supervision (gRPC for Slang)
- Hiring: conducted interviews and improved hiring process

June – Aug, 2017 | Verification Engineer, CPU Group | Arm, Cambridge

- Set-up a new workflow for model-checking undefined decoders
- Verified undefined decoders on two released processors for two different architectures
- Used SystemVerilog, assertions & properties and industrial model checkers

Dec – Jan, 2016/17 | Software Developer | Myrtle, Cambridge

- Developing Haskell compilers which translate Computer Vision algorithms into efficient FPGA circuits
- Project is part of UK Government's Autonomous Vehicles Initiative

July – Sept, 2016 | Undergraduate Researcher | University of Cambridge Computer Laboratory

- Worked on a novel middleware (implemented entirely in C) for Internet of Things devices
- Developed web-apps in JavaScript to demo the middleware's capability
- Presented work to public at the British Science Museum's "Our Lives in Data" August Late.

Technical Experience

- Metaprogramming Summer School (Dagstuhl, 2019)
- [Published paper \(ECOOP 2019\) – NumLin: Linear Types for Linear Algebra](#)
- **Two weeks in Princeton for DeepSpec Summer School 2018**
 - On formal verification (hardware, OS kernels and applications) using Coq
- YouTube video series ([ATypical CompSci](#)) to teach functional programming, targeted at 1st years
- CoderDojo – teaching pre- to mid-teens to program, typically Scratch or Python
- Compiler mini-project: adding safepoints to OCaml native code generation for multi-core
- Studied Category Theory, Coq theorem-prover and formal-verification
- OCaml/ML: a toy compiler, type-inference for it, theorem-prover and a pretty-printer for it
- Contributing to/learning about OCaml (3 compiler hacking evenings, patch in 4.0.5), Idris
- Experience with C and RISC-V assembler during FPGA/hardware design
- Strong familiarity with the Unix command line tools

Activities

Currently, I volunteer with local animal *rights* (not “welfare”) events, as well as vegan cooking at the Bhakti Lounge yoga studio. I also enjoy dancing (Salsa and Bachata), cooking (specializing in vegan Gujarati cuisine) and occasionally doing some yoga and running. I am currently doing the Tergar ‘Joy of Living’ meditation course.

Previously, I completed the ‘Science of Well-being’ course on Coursera. I have learnt and performed Bollywood dancing, radio jockeyed on CamFM, played Trombone in Cambridge Uni Symphony Orchestra (and Drums for fun) and learnt to lead-rope rock-climb. As part of the DofE (Gold, Silver and Bronze) and outside of it, I have attended an outdoor leadership camp (RYLA) and done 100 hours of volunteering in roles such as science classroom assistant and junior coach for Basketball. I grew up in Aberdeen, Scotland, where I received 5 SQA Advanced Highers at A1: Mathematics, Mechanics, Computing, Physics and Music and 6 SQA Highers including English (A1), Psychology (A1) and Philosophy (A) from Dyce Academy.