Oliver Funk

📍 Cape Town, SA   📅 July, 1995

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EDUCATION

UNIVERSITY OF CAPE TOWN
MSc. (Eng.) Electrical
Sp. Low-temp. Nanoelectronics
📅 2019 – 2020
📍 Cape Town, South Africa

UNIVERSITY OF CAPE TOWN
BSc. (Eng.) Mechatronics w. Honz.
📅 2014 - 2017
📍 Cape Town, South Africa

RELEVANT COURSEWORK

ADVANCED CONTROL THEORY
- QFT, H_∞, MPC, Instrumentation
- DC motor control project
- Thesis: Multi-robot systems

DSP
- FFT, Filtering, Wavelets & Frames
- Real-time filtering project

CS
- Data structures, Algorithms, Databases, Parsing, FP
- MISO CPU architecture & instruction set design project
- Code execution performance project

SKILLS

SOFTWARE ENGINEERING
- Dart: Flutter
- JS: React, React Native
- Python: Tensorflow, Flask, Django
- Rust, Delphi, Java, C#, C, ARM ASM
- Firebase: Firestore, Cloud Funcs. Auth.
- Git, CI/CD pipelines, SQL
- GoF patterns, 12FA, DDD

See my GitHub profile.

NANO-FABRICATION
- Microscopy & Measurement: SEM, Photo., Reflectometry, Profilometry
- Lithography: Design (CAD), E-Beam, Photolith.
- Processing: PECVD, RIE, E-Beam evap., BHF etching

Received training at Oak Ridge National Labs (ORNL).

WORK EXPERIENCE

INVICTUS ALPHA | Junior Quantitative Developer
📅 May 2021 – Jan 2022   📍 Cape Town, South Africa
Implement derivatives arbitrage strategies, at scale, trading in the cryptocurrency markets.
Used: **Python**

THOUGHTEXPRESS | Software Developer
📅 Feb 2018 - June 2019   📍 Cape Town, South Africa
Worked, in an in an R&D capacity, to maintain, improve and extend the runtime and algorithms of a purpose built, in-house modelling language, used by the rest of the company.
Used: **Delphi, Python, Rust**

ORACLE (CLOUD) | Intern
📅 June – July 2016   📍 Cape Town, South Africa
Begun the development of an AMQP API using RabbitMQ and the Pika python client, implemented using Twisted Python.
Used: **RabbitMQ, Pika, Twisted Python**

THOUGHTEXPRESS | Intern
📅 Dec 2015   📍 Cape Town, South Africa
Developed an image classification system using a convolution neural network and messaging protocols, to automatically categorise inbound documents.
Used: **Tensorflow, RabbitMQ**

RESEARCH

NANOELECTRONICS LAB, UCT | Masters Student
📅 Jan 2019 – Dec 2020   📍 Cape Town, South Africa
Worked with **Mark Blumenthal** to develop Africa's first super-fluid helium system to produce a controllable single-electron device.
Find my thesis here and a short, research paper style summary here.

EVOLUTIONARY MACHINE LEARNING GROUP, UCT | Undergraduate Researcher
📅 Jan 2015 – Sept 2015   📍 Cape Town, South Africa
Worked with **Geoff Nitschke** and other collaborators to write a research paper on the meta-optimisations of a Genetic Algorithm used on a real-valued optimisation problem.
Find the research paper here.

OTHER ACTIVITIES

IBM QISKIT HACKATHON
📅 Dec 2020   📍 Gauteng, South Africa
Implemented the novel "Quantum Natural Gradient" algorithm into the existing Qiskit VQE optimiser framework.
Find the code here.