Simon Rovder

Email: simon@rovder.com **Web:** https://rovder.com/ **Phone:** 00421948529780

Education

University of Edinburgh (Graduated May 2018)

- Master's Degree in Informatics with Honours (MInf.)

Skills

- **Advanced in:** Python, Java, Redis, Flask, SQL, OpenCL, Solidity, Ethereum, PostgreSQL
- **Experience with:** Kubernetes, Docker, C#, HTML, CSS, React, NodeJS, ASP.NET, JavaScript, PHP, Haskell C, C++, JQuery
- **Operating Systems:** Linux, Windows
- **Tools:** Heroku, Git, IntelliJ IDEs, Visual Studio, Tex, Tensorflow, Hadoop
- **Languages:** English (fluent), Slovak (fluent), Czech (fluent)

Work Experience

Powerful AI (August 2019 - Present)

- CTO & Lead Backend
- Company aims to bring Artificial Intelligence and Machine Learning to the field of Medicine.
- Currently working towards automated detection of Atrial Fibrillation in patients as well as an automated system for treatment recommendation based on current up-to-date medical guidelines.

Bethereum (September 2017 - August 2019)

- Blockchain-backed social betting platform. Allows people to bet the Ethereum-based Bether token on sporting event outcomes as well as the outcomes of skill-based games played within the community. Link: https://bethereum.com/.
- Backend Developer in Python and Java - Wrote RESTful services with Flask, PostgreSQL and Redis, running on Heroku as well as Spring Boot running on Digitalocean.
- Blockchain developer in Solidity - Wrote Smart Contracts for holding cryptocurrencies and distributing winnings.

Microsoft Internship (July 2017 - September 2017)

- Participated in the development of Microsoft Office online services
- Worked on the Office Readiness Toolkit, designed to help users and companies detect potential Office Addin compatibility issues

Droppie (June 2014 - October 2015)

- Backend developer for a location-based social network called Droppie
- Designed the Python-based backend, written in the Flask microframework, using Google Cloud SQL, deployed the backend on Google App Engine, utilizing Google Cloud Technologies and Facebook and Twitter OAuth services
- More information can be found at: https://www.rovder.com/droppie.php

Publications

Optimising Convolutional Neural Networks Inference on Low-Powered GPUs (2019)

- A condensement of my Master's thesis was published in 2019. This work is a followup on my Bachelor's project.
- The work outlines a technique for accelerating the execution of neural network convolutional layers on low powered GPUs using a variation of the im2col operation that arranges data into the Hybrid Morton Order layout outlined in my Bachelor's project. This layout allows extremely fast matrix multiplication, which is what im2col reduces convolution to.
- Results outperformed previous research with a speed increase of 42%.

Projects

Honours Project - Running Neural Networks on the MALI T628 GPU (2016 - 2017)

- Wrote OpenCL kernels for all basic neural network operations and optimised them for the MALI T628 GPU
- Optimised matrix multiplication beyond the fastest available ARM implementation using a novel concept of Hybrid Morton Order Memory Layouts combined with specifically tailored workgroup size allocation
- Report available here: www.honours.rovder.com

Robocup Small Size League(January 2016 - April 2016)

- Built an Arduino-controlled holonomic robot capable of playing football
- Wrote Strategy, Navigation and Vision systems to control the robot
- Code and Documentation: www.fred.rovder.com Further information: www.rovder.com/robots.php

Maze generation (October 2015)

- Designed an algorithm, which generated a 1 000 000 by 1 000 000 pixel maze
- Taking up 125GB with monochromatic bitmap maze tiles, it is likely the largest digital maze ever generated
- Git repository containing the algorithm: https://github.com/SimonRovder/MazeGeneration
- This part is here mainly so you can take a look at the general style of my code.