Francis Gurr

Sheffield, UK
francis.gurr@gmail.com
francisgurr.com
francis-gurr
Francis-Gurr

Summary

I am a recent Electronic Engineering (MEng) graduate from Durham University.
I enjoy solving complex problems both independently and as part of a team. I am a fast learner and enjoy widening my skill set by challenging myself with personal projects. I have experience working on large long term projects and can work well in a range of team dynamics. Whilst completing projects I am highly motivated, organised and strive to ensure all my work is of a high standard. These attributes have led me to receive a first in every programming assignment throughout my degree.
In my spare time I am a keen rock climber, mountain unicyclist and occasional juggler.

Skills

Most experience with:

Java | Python | C | Javascript | MatLab | Electronics | Linux | LaTeX | German

Some experience with:

C++ | React | Express.js | Node.js | MySQL | PHP | Graphic Design

References

Dr Stefano Giani
Assistant Professor
Durham University
stefano.giani@durham.ac.uk

Colin Reekie
Head of Development
Q-Free ASA
colin.reekie@q-free.com

Experience

Masters Project - 1st Class (80%) *Durham University* **2019 - 2020**

- Q-Free, a global leader in intelligent transportation systems (ITS), offered me the opportunity to begin developing a new product for my masters project.
- My project proposed the use of video images to determine the speed of detected vehicles. *As a non-intrusive alternative to current ITS and infomobility systems, this could add a unique product to the ITS market.*
- I used a convolutional neural network for object detection with an accuracy of 98% mAP and a Kalman filter was used to track the vehicles.
- I developed Python software to calibrate the camera using road markings, and used C++ to calculate the vehicle speeds.
- The resulting software was able to provide vehicle speeds in real-time from road-side camera footage.

R&D Intern *Q-Free ASA, Bristol* **Jul 2019 - Sep 2019**

- During my third year design project, I designed an innovative prototype for a non-intrusive roadside detection system to count and classify vehicles.
- Q-Free awarded me the opportunity to develop a working prototype of my design during a summer internship.
- I developed software in C to process data from LiDAR and radar sensors, and used Python to generate graphical 2D side profiles of each vehicle in real time.

Internship *Durham University, Maths Dept.* **Jun 2018 - Feb 2019**

- Co-authored ancillary software for an academic paper entitled *Quartic Graphs that are Bakry-Émery Curvature Sharp*, published in Discrete Mathematics **343** (3), DOI: 10.1016/j.disc.2019.111767.
- I developed a computer classification algorithm in Python to recursively generate all unique radius two local configurations of quartic graphs.
- These results were the basis of the main theorem in an academic research paper.

Education

MEng Electronic Engineering - 2:1 *Durham University* **2015 - 2020**

- Took a year out following bereavement as an exam only student.

MChem Chemistry *Durham University* **2014 - 2015**

- Switched course after year one.

A Levels *Bournemouth Grammar School* **2013 - 2014**

- A* Chemistry, A Maths, A Physics, A German.

Personal Projects

Pathfinding Visualiser **2021 - Ongoing**

- Currently working on a full stack web application to visually depict pathfinding algorithms in action with real world map data.
- **Skills used:** Javascript, React, Express.js, Node.js, MySQL.

Sudoku Solver **Summer 2017**

- Created a JavaFX app to solve Sudoku problems using a recursive backtracking algorithm.
- **Skills used:** Java, XML.