# Francis Gurr


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## Summary


Recent Electronic Engineering (MEng) graduate from Durham University. My main interests lie in software development and machine learning.
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.


## Skills

*Confident:*

Java | Python | C | MatLab | LaTeX | CNNs | Excel | German

*Competent:*

Javascript | C++ | Linux | Electronics

*Experience with:*

SQL | 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**

- Supported by Q-Free ASA.
- Project proposed using road-side video cameras as a non-intrusive alternative to current ITS and infomobility systems.
- Video images were used to determine the speed of vehicles.
- A neural network (YOLOv3) was used for object detection with an accuracy of 98% mAP.
- A Kalman filter was used to track the vehicles.
- Developed software to calibrate the camera using road markings.
- The project proved successful and 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**

- The continuation of a successful third year design project.
- Project managed a group of six students.
- Designed and developed a prototype non-intrusive roadside detection system for counting and classifing vehicles.
- Innovative design using LiDAR and radar.
- Developed custom software to generate 2D side profiles of vehicles using LiDAR data.

**Summer Project** *Durham University* **Jun 2018 - Feb 2019**

- Co-author of 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.

## Education

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

- Took a year out following bereavement.

**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.

## Achievements

- Launched first ever Durham Yule Ball with a budget of over £3000, which has been nominated for best student event and commended by the leading student newspaper.
- Founded the Durham Circus Society.
- 2nd place in the Athena Swan Level 1 Essay, entitled *Why are there fewer women in engineering?*.
- Graphic design for Durham Juggling Convention marketing.
- Grade 8 Saxophone, grade 7 Clarinet and grade 3 piano.
- Level 2 Certification in Lean Organisational Management Techniques.