

# KESTER BROATCH

## Autonomous Vehicle Engineering Graduate

✉ [KesterBroatch@gmail.com](mailto:KesterBroatch@gmail.com)

📍 Amsterdam, NL

🐙 [Github](#)

in [LinkedIn](#)

🌐 [Homepage](#)

## EDUCATION

### Autonomous Vehicles MSc - Cranfield University

📅 Sept 2019 – Aug 2020

📍 Milton Keynes, UK

Overall Grade 84%, Autonomous Vehicle Control (87%), Simulation (91%), AI for Autonomous Systems (75%), Guidance (82%)

### Aeronautical Engineering BEng - University of Glasgow

📅 Sept 2014 – Jun 2019

📍 Glasgow, UK

First class degree. Specialised in Robotics and Flight Mechanics.

## EXPERIENCE

### Software and Controls Intern - Avy Drones

📅 Sept 2020 – Present

📍 Amsterdam, NL

- Working on a safe landing system which uses computer vision to choose the best spot to autonomously land on.
- Researched potential IoT solutions to allow the drones to be controlled and updated over the web.

### Simulation and Modelling Intern - MBDA Systems

📅 Sept 2017 – Aug 2018

📍 Stevenage, UK

- Part of a small software team which was responsible for developing and testing air combat simulation and hardware-in-the-loop models.
- Identified critical errors in the aerodynamics model which lead to a company wide model update. Presented results to leadership team.

### Head Engineer, Student Racing Team - UGRacing

📅 2017 and 2019 seasons

📍 Glasgow, UK

- Appointed as Head Engineer of the university formula student team. Helped to raise the team from 87th position in 2016 to 12th position in 2019 in the annual competition at Silverstone Circuit.
- Managed over 40 undergraduate students of all backgrounds.
- 2019 car (and me!) featured in [Racecar-Engineering](#) magazine.

## PROJECTS

### Drone Swarming - University competition funded by BAE

- Worked in a team to develop and deploy a defensive drone swarm.
- Created and tested a camera based collision avoidance system.
- Responsible for integrating swarm using ROS architecture.

### Terrain-learning Vehicle - MSc project funded by Qinetiq

- Developed a self-supervised learning architecture which learned its terrain by interacting with it.
- Extensive use of Keras and Robot Operating System (ROS)

### Racing Simulator - BEng final year project

- Designed a high fidelity simulator for a formula student racing car.
- Majority of model empirical based, carried out subsystem tests to produce model look-up tables, and validated with track data.

## ACHIEVEMENTS

🏆 Head Engineer of student racing team during the period the team moved up by 75 ranks

🎓 First class degree and listed on the universities engineering excellence list

🏠 Qualified commercial drone pilot recognised by CAA

💰 Awarded talent scholarship by University of Glasgow

## SKILLS

Simulation

Computer Vision

Guidance

Sensor Fusion

Machine Learning

Control

Leadership

Project Planning

## SOFTWARE

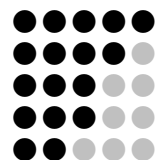
Python, ROS, Docker

C++, Pixhawk, PX4

Git, bash, Linux

Gazebo, Matlab

Fortran, LaTeX



## INTERESTS

### Aircraft Restoration

- Volunteered at Dehavilland Aircraft Museum for 6 months
- Assisted in restoration of DH Mosquito landing gear and a Fire Streak missile

### Flying and Racing

- Working towards a private pilots license (6 hours of flying)
- Experience in hill climb style race cars
- Fully clean drivers license

### Workshop Tinkering

- Experience in machining and welding.
- Built workshop and workbenches.
- Projects include model rockets, various bikes, tinkering with arduino and restoring a lathe.

### Outdoor Sports

- Enjoy kayaking, camping and cycling