

# Matteo Trombini

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## Education

### BEng Aeronautics and Astronautics

University of Southampton, Southampton (UK)

September 2017 – July 2020

Upper Second-Class Honours (2:1)

The degree covered the **fundamentals of engineering and manufacturing processes**, as well as the **principles of aerodynamics** and air/space craft propulsion. Third year modules included advanced topics such as aerothermodynamics, control systems, and aircraft structural design. Additionally, I completed my **undergraduate dissertation**, where I designed and developed an automated flight-testing protocol for fixed-wing aircraft (further information in *Projects* section below) – achieving a high mark of 69%. I focused heavily on programming, mainly in **Python**, and applying it to most projects whenever possible – examples on my website.

### International Baccalaureate Diploma

Zurich International School, Zurich (Switzerland)

August 2014 – June 2016

Unweighted 3.6 GPA and honours

## Experience

*References available upon request*

### Drone Product Tester at *Wingtra*

Wingtra AG (Zurich, Switzerland)

- Handling of testing drone fleet and needed equipment.
- Following precisely defined testing protocols on the field and in office.
- Thoroughly reported errors, findings, bugs, and incident that occurred during flight tests. **Liaised with developer team** to patch proprietary software.

October 2020 – Present

Skills learned:

- deep insight into applied robotics and aerial data collection
- organization of mass data storage
- ability to **effectively communicate complex technical issues to developer team**

### Sustainability Research Intern at *Dow Europe*

Dow Europe GmbH (Horgen, Switzerland)

- Compiled data on European Polyethylene recyclers into database and identified 18 potential partners from 6 countries. Project involved calling businesses, researching, and **forming company profiles**.
- Completed study on European Polyethylene market, determining how much plastic was recycled, where and how it was processed.
- Worked independently** and internally with different teams through individual meetings, conference calls, and presentations to deliver progress reports.

July 2019 – August 2019

Skills learned:

- ability to **present** and answer questions about work; **explain technical concepts** in a professional environment
- ability to **consistently** deliver **multifaceted analysis reports** on a strict schedule
- capability to self-organize multiple long-term projects
- calling external companies (enquiring about production capacity, pledges...)

### Mechanical Design Team Lead

CanSat 2019 Competition (Dallas, USA)

- Managed team of 3 people** to design and manufacture two components of final satellite structure, container and payload with camera, environment sensors and release mechanisms.
- Project culminated in competition in Texas where final CanSat device was launched from rocket to a height of 700 metres.

November 2018 – June 2019

Skills learned:

- delegating tasks** and ensuring **timely completion** of project milestones in a year-long project
- leadership and management of a **technical project**

## Projects

*Detailed overviews of projects on personal website, see above*

### UAV Flight Testing Protocol (Dissertation)

- Developing flight testing protocol that automatically 'learns' aircraft performance to determine drag-polar, tested in virtual software-in-the-loop environment
- Collected data was compiled and analysed using Python to produce graphics and interpret physical meaning of data to determine aircraft characteristics

September 2019 – Present

- independent time management**
- academic **research** producing a literature review and finding relevant theory
- extensive data analysis using **Python**; specifically, **Pandas** and **ArduPilot**

### Fixed Wing R/C UAV Platform

- Determined optimal aerofoil, with use of ANSYS CFD analysis
- Calculated wing semi-taper location, twist angle, and aileron dimensions
- Manufactured wing using laser-cutter and 3D printing techniques, and flight tested

January 2019 – May 2019

- implementation of flight mechanics and aerodynamic principles into **Python**
- solving complex integration issues in a **team project**

## Extracurricular & Volunteering

#### Elected **Course Representative**

- represented Aerospace Year 2 student body of 150 to senior academic staff

#### Human Powered Aircraft Treasurer

- secured over £2,000, helping revive historic university society responsible for first ever human powered flight

#### A-Level Maths Class Assistant

- Richard Taunton, Southampton (Nov 2019)

#### Personal Maths Tutor (Southampton)

- Upper Shirley High School (Jan - May 2019)

#### Cardiology and Gastroenterology Intern (Zurich)

- Universitätsspital Zürich (Jun - Jul 2016)

## Skills

**Confident in:** Python 2.7 & 3.6+, SolidWorks, Fusion360, LaTeX, ArduPilot, Arduino, Laser Cutting, 3D Printing

**Languages:** English (native), Italian (native), Spanish (B1), German, French (IB Grade 7/ B1)

## Interests

- Completed 30 hours of flight training towards a Private Pilot License and member of the Gliding Society
- Day Skipper Sailing License
- Skiing, Tennis, X-Country Running
- Web development