

### Background

I carried out a placement with Renesas via the UKESF scholarship program, as a sandwich year in my Robotics, Mechatronics, and Control Engineering MEng degree at Loughborough University. My role was a trainee engineer in the Software Infrastructure Division of the Automotive Business Unit of Renesas Electronics Europe.

### My Roles and Responsibilities

My main role is in the software infrastructure team, which also includes the swiftmon project team. I am a fully integrated member of these teams, being assigned tickets to work on independently with outputs that contribute to the team's overall goals and results.

### Main Projects

#### Learning Python

In the first two quarters, my tickets helped me to familiarise myself with software engineering principles and practices, in order to prepare me for later projects. These tickets involved some code refactoring and bug fixes in the infrastructure repo, and some modifications to existing tools

#### Reqtify

In the second quarter, I had some tasks relating to the Reqtify requirements tool. These mainly involved updating some report formats and gave me some experience with a new tool and further developed my flexibility.

### Tools and Software

#### Reqtify

- XML
- OTScript

#### Infrastructure programming

- Python
- Pytest

#### Swiftmon

- Django
- Python
- JavaScript
- CSS
- HTML

#### Project Management and Version Control

- Jira
- Gerrit
- Gitlab
- Jenkins
- Confluence

### Concepts Learned and Skills Developed

#### Engineering

- Software principles
  - Maintainability
  - Robustness
  - Reliability
  - Code-reuse
- Frontend design
  - Layout
  - Theming
  - Aesthetics
  - Ergonomics
  - Functional usability
- Other factors
  - Designing for external users.
  - Application of requirements to initial designs.
  - Effects of feedback on iterative progress

#### Professional and Personal

- Timekeeping
- Teamworking
- Confidence
- Commercial considerations such as demonstrating value to stakeholders.
- Interpersonal skills and communication.
- Experience with the agile project management methodology.



The swiftmon project has really been the most valuable part of the project for me in terms of lessons learned and skills developed. It is also the area in which I believe I have made the most contributions to the team and company.

It is an ongoing project involving the creation of a tool to gather test result data from various pipelines and to collate and display this information on a website frontend. My contributions have focused on this frontend, using web development techniques and principles alongside JavaScript, HTML, CSS, and python programming.

### Reflection

This placement year has been incredibly valuable for me and my development, both as an engineer and as a person. I've developed numerous technical skills which I can use in future projects, and I've developed skills which I can use often outside of engineering, such as interpersonal skills, and confidence. My ability to learn and adapt to new situations has grown massively, and I've learned some very important lessons which could only be learned in industry, with the support of my team.