

# Kitty Farren

## Development Engineer at Nidec Drives

✉ farren.kitty@gmail.com

☎ 07538096370

📍 UK

in [www.linkedin.com/in/kitty-farren](https://www.linkedin.com/in/kitty-farren)  [github.com/kitblafar](https://github.com/kitblafar)  [kittyfarren.dev](https://kittyfarren.dev)

## 👤 ABOUT

Development engineer with a 1st class master's degree in electrical and electronics engineering. Currently working in internal tool development for an industrial automation company but looking to move into a software development role. For the past year, have been developing a power electronic thermal model generation system for AC drives including an MVVM C# .NET application; SQL database (Microsoft SQL Server) and electronics. Skilled in full-stack development, .NET and Python tooling.

## 🏢 WORK

### Nidec Drives (prev Control Techniques)

📅 Jul 2019 - Present

📍 Powys

🕒 5 yrs 6 mos

#### • Development Engineer

📅 Oct 2024 - Present 🕒 0 yrs 3 mos

Developed a new thermal model generation process.

- Wrote a C# .NET program for processing large amounts of IGBT thermal data into a VFD thermal model including ML algorithm, WPF UI and SQL server database.
- Constructed a panel for automated IGBT thermal data collection including a custom PCB, embedded C++ solution and 3D models.
- Supported a junior engineer in using the developed program and test procedure
- Practiced test driven development (TDD) for data processing tasks by writing Python test data generation functions before the final C# program.

#### • Graduate Engineer

📅 Jul 2022 - Jul 2024 🕒 2 yrs 0 mos

This role included rotations in the Power Electronics, ECAD and Tech Support departments to broaden my engineering skill set

- Power electronics: Developed a suite of .NET programs to control a test panel and the process the data collected; wrote a more efficient C# algorithm for processing thermal data that reduced test run time by 8 hours; Designed Python and VBA tools for automated power electronics simulation and data processing; researched novel current sensing technology for next gen drives.
- ECAD: Completed a lay out of a family of boards (FOB); demonstrated and presented use of distributed version control using Git on DevOps for PCB designs; set up an internal KiCAD workflow; and aided the India team in creating layouts and schematics.
- Tech Support: Produced a Python web-scraping and data processing tool with Qt framework and Selenium; wrote a specification for a set of Android setup wizards using Figma; answered customer tickets.

#### • E3 Student Engineer

📅 Jul 2019 - Jul 2022 🕒 3 yrs 0 mos

Summer placements in the Electronics (2019), Tech Support (2020) and Embedded Elevator (2021) teams as part of the E3 Academy scholarship scheme.

- Simulated control circuits in SIMetrix and carried out EMC testing.
- Reviewed strings in drives to improve customer experience.
- Specified and produced a suite of automated tests for elevator drives written in Structured Text on a PLC.

## 🎓 EDUCATION

### MEng Electrical and Electronics Engineering

📅 Dec 2018 - Dec 2022

University of Nottingham

1st Class Hons. IET Accredited.

Individual Project:

A Framework for Plenoptic HDR Imaging using Metasurfaces

Modules:

Computer Aided Engineering; Information and Systems; Electronic Processing and Communication; Modelling Methods and Tools; HDL for Programmable Devices; IT infrastructure and cybersecurity; Digital Signal Processing; Sensing Systems; Instrumentation and Measurement; Power and Energy; Electrical Energy Conditioning and Control; Contemporary Engineering Themes; Electrical Machines, Drive Systems and Applications; Analogue Electronics; Professional Studies; and Advanced AC Drives.

Group Projects:

Car telemetry: JavaScript web application in Vue with Node backend to plot, stream and save car data; Autonomous line following and RC Car: C++ and OpenCV on embedded Linux (Raspberry Pi); Doppler radar speed sensor: embedded C solution on STM32 for real-time signal acquisition, processing, and display; and Buck-Boost SMPS: design and creation.

Awards:

Peter John's Award for an Outstanding Final Year Student and Michael Bromwich Award for the Two Highest Achieving Home Students.

## VOLUNTEERING

### STEM Ambassadors

#### • STEM Ambassador

 Sep 2021 - Present  3 yrs 3 mos

STEM ambassadors aims to raise the awareness and understanding of STEM careers. This includes attending careers fairs and events; creating classroom showcases and leading computer workshops with the STEM ambassadors and careers teams.

- Promote STEM to young women and being visible as a woman in engineering.
- Manage and running workshops to give students hands-on experience and making links to real-world applications.
- Develop interactive demonstrations of software writing, electronics and control systems.
- Give presentations and Q&A sessions to help demystify STEM.
- Developed presentation skills explaining technical information to a non-technical audience.

### Women in Engineering Society (WES)

#### • Member (MWES)

 Jan 2022 - Present  3 yrs 0 mos

This is a group to support and increase the visibility of women in engineering.

- Organised company engagement with the "Lottie Tour" for Tomorrow's Engineers Week 2023 to show different sectors of engineering to young women.
- Founded the Women in Engineering group at Nidec Drives which now includes all women in STEM roles at Nidec Drives.
- Took part in Women in Tech promotional events including chairing a Women in Engineering round-table video and attending International Women's Day events.

## SKILLS

### Software Development

Python C# .NET Framework .NET Core WPF WinForms Databases and SQL JavaScript  
Vue Framework Node ASP.NET HTML CSS Bulma Framework Linux Windows Qt  
Tkinter VBA Docker Golang

### Embedded Development

C++ C Arduino Raspberry Pi Automated Testing Digital Signal Processing

### Electrical And Electronics Engineering

Thermal Modelling VHDL PCB and ECAD Circuit Simulation EMC Design and Testing  
Power Electronic Design Digital and Analogue Electronic Design

### Industrial Automation

Variable Speed Drives (VSDs, VFDs) IEC Structured Text PLCs Panel Design

### CAD

CST Microwave Studio Simetrix PLECs LTSpice KiCAD DxDesigner Blender FreeCAD

### Written Communication And Documentation

GitHub DevOps TFS Git Figma Microsoft 365 LaTeX Markup HTML CSS

## </> PROJECTS

### Personal Website

A static website for writing up personal projects written in vanilla HTML and CSS (apart from the confetti).

### Photo Game

A game where the player tries to get photos of themselves doing certain challenges. A full-stack web-application with Vue.js frontend, REST ASP.NET MVC API backend and SQLite database. The backend is deployed using Docker on my web server.

### Bluetooth Earrings

A set of earrings that blink different colours over BLE. Includes PCB panel design, NRF52833 embedded solution and MAUI app. The app uses a CI/CD pipeline to auto build the main branch (GitHub actions).

### Meta-surfaces for HDR, Plenoptic Imaging

My dissertation project on designing metasurfaces for plenoptic, HDR imaging. Includes MATLAB lens generation program, from CST simulation results and Python image reconstruction program using Tkinter.

### Road Range

A web-app to stream car telemetry data to the browser over WebSocket. Node backend with Vue frontend.

## \* OTHER

### Languages

English (Native Speaker) German (Limited Working)

### Interests

Crochet and Needlework 3D modelling (Blender) Hobbyist Electronics Rock Climbing Painting Running Singing and Guitar

## 🗨 REFERENCES

### Lead Power Electronics Engineer: Ed Peate

Company: Nidec Drives, Email: available on request