Kitty Farren

Development Engineer at Nidec Drives

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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
5 yrs 6 mos

Powys

- **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 for data processing tasks by writing equivalent verbose functions in Python to test the C# equivalent with.

- **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

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