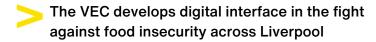# VEC VIRTUAL ENGINEERING CENTRE

After joining the VEC as an intern and returning for three summers, I became a fully-fledged member of the multi-disciplinary team, working on a variety of projects across industry and delivering real impact. I have developed multiple skills and my professional confidence has come in leaps and bounds.

SHAUN JOHNSON
GRADUATE DATA SCIENTIST

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PROJECTS

> The VEC develops digital interface in the fight against food insecurity across Liverpool

Shaun supported the VEC team in the development of a digital interface for The University of Liverpool's Centre of Excellence for Sustainable Food Systems. The system used open source data and algorithms for quickly identifying trends regarding access to healthy foods for communities across the Liverpool City Region.

This tool concentrates on types of food stores, goegraphical distributions across sub-regions and public transport, all variables which can have an impact on food security. These findings can then be visually communicated to policy makers and decision makers for improving this access to even more communities.

> Innovative Solutions for Net Zero Targets: Harnessing the Power of Machine Learning and IoT

All Green Energy are green energy solution specialists harnessing technologies from renewable energy, battery storage, power electronics, IoT, big data, machine learning and cloud computing to deliver net zero targets.

The VEC collaborated with All Green to identify sources for collecting various data for a solar panel system, including weather, cost, and electrical usage. Machine learning techniques took this historical data to support the prediction of future energy costs, better informing decision-making.

The project also involved training an AI model on these various data sources to help a solar panel battery accurately make decisions regarding the management of its electrical charge, which can help reduce waste and optimise energy use. The testing has theoretically highlighted the ways of working, which can lead to increased efficiencies as testing the proof of concept will explore how the AI model performs in the real world.

BACKGROUND

MEng in Mechatronics at the University of Liverpool

SKILLS

- Robotic Systems
- Data Processing
- Data Analytics
- Machine Learning

INTERESTS

- Robotics
- Autonomous Systems
- Renewable Energy
- Sustainability

UNIVERSITY OF LIVERPOOL