James R Booth

PROFFESIONAL SUMMARY

Data professional with 10 years experience in Process & Manufacturing Engineering. Particular focus on Smart Factory and Industry 4.0 with IoT applications. Strong experience in systems engineering, project management and statistical analysis. 2+ years experience with Python & SQL. Experience with Django front end development. Background in Electronics hardware manufacturing and PCB design.

WORK HISTORY

Data Engineer, jbooth.dev: November 2022 – Present

- Built ETL system for IoT application with MQTT & AWS IoT Core
- Built system for analysing large data sets for iMBD film ratings with PySpark
- Built linear regression model for house price predictions using Sci-kit learn
- Built data visualisations for Formula 1 race data with Tableau
- Analysed financial and healthcare data with MySQL & PostgreSQL
- Built portfolio website to showcase work with Django, projects are regularly added

Senior Process Engineer, Microchip Technology: November 2021 – November 2022

- Built ETL system for extracting, wrangling, and storing manufacturing data using Python & SQL.
- Built manufacturing KPI dashboard for OEE with Django & Plotly.
- Built tool to migrate legacy data from Excel spreadsheets into Microsoft SQL Server.
- Built Django web apps for updating manufacturing tool inventory.
- Built IoT system for real time measurement of curing ovens using PIC-IOT boards and Hive MQ
- Built Python apps to support manufacturing such as barcode scanners
- Carried out hypothesis testing for introducing new manufacturing materials and process tooling, utilising chi-squared, ANOVA, and linear regression.

Process Engineer, Rockley Photonics: January 2021 – August 2021

- Used Jupyter notebooks to program machine vision system for silicon wafer mapping
- Improved Cognex image detection through hypothesis testing and design of experiments using Minitab & Python
- Built ETL pipeline to log machine data to PostgreSQL server

Research Engineer, The Manufacturing Technology Centre: January 2018 – December 2020

- Part of the first Smart Factory in the UK. Worked on IoT systems to track PCB location in a factory using RFID
- Carried out statistical analysis for manufacturing improvements on customer site visits

Senior Engineering Technician, Dynex Semiconductor: July 2013 – December 2017

- Responsible for process improvement using statistical and six sigma methods

EDUCATION

- BSc (Honours) Economics & Mathematical Sciences (*in progress, graduation 2026) – The Open University*
- Certificate of Higher Education in Economics and Personal Finance – *The Open University*
- BTEC Higher National Certificate in Electrical & Electronic Engineering – *Lincoln College*
- BTEC Diploma in Electrical & Electronic Engineering – *Lincoln College*
- BTEC Advanced Certificate in Electronic Engineering – *ICS learn*
- Time Served Apprenticeship

CERTIFICATIONS

- ILSS Six Sigma Green Belt
- AWS Cloud Practitioner
- PRINCE2 Foundation

PUBLICATIONS

- J. Booth et al., "High Reliability Large Area Substrate Solder Interconnect by Embedded Mesh Technique," PCIM Europe 2017; International Exhibition and Conference for Power Electronics, Intelligent Motion, Renewable Energy and Energy Management, Nuremberg, Germany, 2017, pp. 1-7.
- Y. Wang, J. Booth et al., "Development of High Thermal Performance Automotive Power Module with Dual Sided Cooling Capability," PCIM Europe 2017; International Exhibition and Conference for Power Electronics, Intelligent Motion, Renewable Energy and Energy Management, Nuremberg, Germany, 2017, pp. 1-5.
- J. Booth, K. Vijay, P. Mumby-Croft, M. Packwood, K. Evans and A. Dai, "Novel Technique to Reduce Substrate Tilt & Improve Bondline Control between AlN Substrate and AlSiC Baseplate in IGBT Modules," PCIM Europe 2016; International Exhibition and Conference for Power Electronics, Intelligent Motion, Renewable Energy and Energy Management, Nuremberg, Germany, 2016, pp. 1-8.

https://jbooth.dev

+44 77 202 66 727

j.r.booth01@gmail.com

TECHNICAL PROFILE

Technology:
Python, MySQL, PostgreSQL, Microsoft SQL
Strong documentation skills

Python:
Built ETL system for IoT application with paho mqtt & AWS IoT Core

Developed full stack web applications with Django

Developed interactive web forms with Django for logging data to Microsoft SQL server
Development of complex data engineering pipelines in Industry 4.0 settings
Unit testing with PyTest & Django

Versioning:
Source code version control with git and GitHub

IDE:
VS Code, Jupyter, PyCharm & Thonny

Operating Systems:
Mac OS Ventura (M1/M2 & x86), Debian/Ubuntu Linux, Amazon Linux 2, Windows

Server & Cloud:
Setup and management of AWS Servers including EC2, RDS, IAM & IoT Core
Setup and management of MySQL Database Server