James R Booth

PROFFESIONAL SUMMARY

A self-motivated and passionate data enthusiast, looking to move into the more exciting field of data. After almost 10 years in the manufacturing sector utilising statistical tools such as six sigma, DoE and SPC I am looking to move into more challenging roles. I've been learning and utilising Python for approximately 18 months with SQL.

WORK HISTORY

Senior Process Engineer, Microchip Technology: November 2021 – Present

- Led Smart Factory Industry 4.0 workstream & strategy for medical device manufacturing.
- Built manufacturing KPI dashboard with Django & Plotly.
- Migrated legacy data collection from Excel spreadsheets into Microsoft SQL Server.
- Built Django web apps for updating stencils and tool inventory.
- Developed OT method for data extraction from manufacturing robots and built data pipelines. Automated data wrangling & cleaning operations, feeding normalised data into our central Microsoft SQL database, utilising pandas, watchdog & sqlalchemy.
- Deployed above systems in a production Windows server environment as independent services & linked to the manufacturing file system, making the web-based dashboard available for manufacturing leaders inside our VPN.
- 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

- Responsible for small batch production of silicon photonic devices using flip chip die bonder. Developed OT data extraction methods for data analysis of process stability.
- Improved Cognex image detection through measurement system analysis and subsequent optimisation DoE. Improved Cp/Cpk from 0.0183 to 1.83 utilising Minitab and JMP statistical software packages.

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

- Technical lead of CR&D conformal coating optimisation project, the challenge was to develop new process methods to ensure even and complete coverage of acrylic coatings on the vertical edges of QFP packages. Carried out data analysis using Minitab statistical software.
- Founded the MTC's Environmental Working Group, focussed on building capability in the emerging net zero markets. Actively writing into two Innovate UK sustainability funding calls.
- Technical lead and project manager of a capability development project in E-textiles. Led a team to develop a hand tracking digital twin using a pair of smart e-textile gloves.

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

- Internationally published whitepapers at PCIM, EPE and IMAPS.
- Introduced and improved manufacturing processes with statistical process control and design of experiments

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.

CONTACT

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SKILLS

- Python
- Django
- Pandas
- Plotly
- Numpy
- Watchdog
- SQL
- Git
- AWS
- Linux
- Minitab
- JMP
- Excel
- Project Management
- Microsoft Office
- PCB Design
- Solid Works
- Systems Thinking
- SPC
- DOE
- OEE
- FMEA

PERSONAL

- Open University Student
- Raspberry Pi Enthusiast
- Scuba Diving (BSAC Sports Diver)
- Ghost Fishing UK (Ghost Net Recovery)
- Caving/Potholing
- Photography
- Economics
- Completer Finisher/Specialist/Monitor