

Dr Benjamin A. Coombs

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Profile

Solutions-driven data professional with a Ph.D. in Physical Chemistry and over 15 years of experience in data science and analytics, most recently within high-tech manufacturing. I bring strong expertise in statistical analysis, coding, and data-driven problem-solving, combined with a creative and analytical mindset. As a seasoned leader, I excel in fostering team growth, driving innovation, and leading projects that deliver value for stakeholders.

Core Competencies

Python	Azure	Leadership
SQL	Analysis & Modelling	Stakeholder Management
Tableau	Visualisation & Dashboarding	Mentoring

Education

Ph.D. Physical Chemistry; University of Durham	2006 – 2009
M.Chem (hons) Chemistry; University of Durham	2002 – 2006

Experience

Pragmatic Semiconductor

Head of Manufacturing Intelligence	Feb '22 - Now
<ul style="list-style-type: none">Expanded headcount with a strong focus on diversity, building a multifunctional team (DBA-DE/DA/DS-MLEng), integrated across the UK and Europe<ul style="list-style-type: none">Cultivated a culture of transparency, psychological safety, and trust within the teamImplemented DevOps and MLOps practices to streamline development and optimize machine learning operationsDrove a strategic overhaul of key production department's technical data logging and automated analysis capability<ul style="list-style-type: none">Including the implementation of bespoke ML approach to signal analysis, removing reliance on out-dated KPIsDeveloped and directed a project utilizing Convolutional Neural Network (CNN) encoders to classify wafer maps based on yield signaturesML approach improved accuracy in detecting patterns and anomalies, driving faster root cause analysis and enabling more efficient process optimizationSpearheaded some low level marketing analytics (customer segmentation via RFM and KMeans and churn analysis) provided for exploratory understanding of CRM/ERP and social platforms' interactionsLead on pilot project scoping & developing RAG interface based domain-specific LLMDirected analytical and modelling task forces, supporting engineers and scientists across multiple disciplinesDeployed an internal API underpinning a self-service data portalOverhauled C-Suite-facing reporting, implementing dashboards, enabling improved visibility of KPIs, affording users' drill-down capabilityDrove company-wide adoption of Tableau for BI/reportingSupported and guided compliance team for successful ISO 27K accreditation	

Data Scientist/Senior Data Scientist – Operations	Jul '18 – Jan '22
<ul style="list-style-type: none">Technical leadership of data analytics on various task forces<ul style="list-style-type: none">Covering R&D, process development engineering projectsWinner of 'Above & Beyond' internal award for contribution to key business objective	

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- Extensive analytical, statistical and ML techniques used to help understand complex interactions of a ~100 step high-tech manufacturing process with complex test outputs and improve process development cycles
 - Extensive EDA, **feature engineering/selection, dimensionality reduction, model selection and hyper-parameter tuning**
 - Performed tool performance monitoring and analysis to enable improved scheduling of maintenance events i.e. **predictive maintenance** (time series analysis using **ARIMA/association rule**)
 - Ensemble models (especially **Random Forest**) used to allow causal inference on sources of process issues - directly contributed to **> 40% yield** improvement over 1 month
 - Supporting engineers through statistical analysis to prove/disprove hypotheses, including use of A/B hypothesis testing
- Devised and **developed Python code base** and built and documented the in-house module for accessing all internal operations data across multiple data sources
- Deployed Tableau as go-to BI/reporting tool across OPS and R&D platforms, and power user for dashboard development support/guidance

Centre for Process Innovation

Senior Research Scientist – Informatics (National Formulation Centre)

Jan '17 – Jun '18

- Developed automated analyses and visualization of output from high-throughput automated formulation robots, enabling cost-savings of over ~£100K p/a
- PM on successful **£250K novel energy capture** material feasibility trial, securing follow-up pipeline project
- PM and technical lead on **£400K data capture platform** implementation

Senior Scientist – Organic Materials' Integration (Printable Electronics)

Nov '12 – Dec '16

- Lead analyst and process development scientist on iUK-funded (~£500K) multi-party project to develop UKs first fully organic QVGA display (OLED)
- Developed custom Python scripts for large scale, automated analysis and reporting of wafer test data

Academia

Post Doctoral KTS Fellowship (Proctor&Gamble/Durham University)

2012

- Developed hardware and software for real time multi-spectrum video analysis to identify product defects

Post Doctoral Research Associate (Heidelberg University, Germany)

2011

- Advanced my own research as an extension of my PhD, mentored post graduates, and consulted on multiple projects inc. planning, commissioning and procurement of a new €2Mn organic electronic development laboratory

Post Doctoral Research Associate (Johnson Matthey/Durham University)

2010

- Modelled, prepared and analysed novel catalyst bed materials

Skills, Interests & Other

Professional Tools

- Excellent analytical and coding skills
 - 15+ years in data-centred roles
- **Key stack: Python, SQL, Tableau (JIRA & Git supporting CI/CD and Agile workflows, dbt)**
- Working familiarity with R (via POSIT) and PowerBI
- Cloud platform familiarity (Azure and the MS ecosystem) but also good knowledge of GCP
- Strong and confident communicator, with demonstrable history of asking probing and relevant questions to understand the core of issues and enable solutions
- Proven track record of being able to drive data projects through from initial specification and requirement gathering through to delivery, including maintaining via CI/CD approach
- Excellent management skills (time, stakeholder, people and projects)
- Experienced and highly capable leader of teams, with a strong focus on developing the individual, supporting mentoring and enabling up-skilling, whilst also maintaining visibility on delivering business critical solutions
- EDI-W champion, with special interest in Neurodiversity

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Hobbies & Interests

- Avid cyclist and percussionist/musician (drums, piano, guitar, brass)
- Married with children + dog; at the weekend, and if the weather permits, you'll find us at the beach or camping

Testimonials

"... really easy to work with, straight forward open and brings solutions or routes to solutions... very inclusive... In the Pragmatic words - you are pragmatic, enthusiastic, and show great tenacity" - VP @ Pragmatic

"Working with Ben is always a productive and fruitful experience... helpful and willing to get involved on any improvement projects for the benefits of the business... communicates very well cross many levels of the business" - Director @ Pragmatic

"Glue that holds the team together — guides the team, clear at communicating issues or expectations to us actively takes actions to resolve (issues) ... takes feedback on board ... Strong technical understanding of data science but also the context ... and how it affects the bigger picture" - Senior Data Scientist @ Pragmatic

"Authentically appreciates diversity" - Data Scientist @ Pragmatic