Alex Searle-Barnes

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Data science and research experience

2017 – 2025

Data Scientist – St James's Place

I've matured data science capability within St. James's Place, pioneering the use of data-driven insights to support strategic decision-making. As the company's first Data Scientist, I've developed mathematical models to predict future client and partner outcomes, enhancing customer experiences, profitability, and regulatory compliance. My research work combines internal and public datasets to generate evidence-based insights, supporting engagement with Westminster MPs and public policy teams. Working to deadlines and budgets and subsequently writing high-quality reports

PhD and Research Technician – University of Southampton

I've collected, modelled and visualised the world's largest dataset to answer questions around the environment, climate and evolution. The data is from many sources and complex, needing to be reduced before modelling and subsequently visualising to present as a story. Through method development processes, I've optimised data collection from analytical instrumentations (mass spectrometry, X-ray CT and quantitative surveys) resulting in numerical, text and image data all within the project constraints of time, sample throughput and facility cost.
I've built a relational database to combine these multi-proxy data sources that integrates into **Excel**, **R**, SQL, Bash and **Python**. Using my knowledge of statistics, mixed-effects modelling and chemistry to answer my research questions.

I studied past ocean environments using the chemistry of fossilised shells (planktic foraminifera) to reconstruct past climates and understand the impact of modern climate change. I've analysed thousands of foraminifera shells at an individual chamber resolution, then automated the processing of over 40 million data points in R as inputs for proxy equations to reconstruct the lifetime habitat of the foraminifera, ocean temperature and polar icecap volumes. I've **published** eight papers in peer-reviewed scientific publications and presented it at international conferences. I've written new software to meet novel needs when no existing software existed, such as a timeline of historical events and climate as an educational tool. My experience results with reliable, validated datasets fostering informed decision making by industry, leaders and researchers to address and mitigate the impact of climate change.

Alongside my research, I reported key performance indicators to the University's Deans and stakeholders as part of the Technician Commitment Working Group. We ensure visibility, recognition, and career development for those in higher education and research, by identifying skill area dependencies, demographic changes and survey responses, which aid sustainable decision making by the University's leadership teams. I built dashboards in **PowerBI** to present longitudinal results to summarise the impacts of the Technician Commitment over time.

I **support teaching** to undergraduates for a data science and statistics module. I also support 3rd and 4th year students with their research projects, including training with specialist software.

Professional qualifications

- Advancing Computational and Data Literacy course by BBSRC
- Writing Quality Papers by Thinkwrite
- Interactive Data Analysis and Visualization with R Shiny by Transmitting Science

Education

University of Southampton, MSc Chemistry — 2016 – 2017

Advanced analytical skills in statistical analysis and laboratory based research projects.

University of Plymouth, BSc Chemistry (Honours) — 2013 – 2016

- Graduated with **1st class honours**. Core topics include Organic, Inorganic, Physical and Analytical Chemistry, with a focus on laboratory practical work.
- Research project investigating the geographical origin of oil collected from beaches in Devon using geochemical markers.

Interests and hobbies

- I volunteer for The Loop, a harm reduction charity, providing services at nightclubs, festivals and in city centre communities and subsequently publishes its statistics for Government use.
- I enjoy cycling, amateur radio and gardening.