Oliver Burden

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Professional Profile

Data Engineer with a data scientist's mindset — applying advanced SQL, automation, and modelling to deliver efficiency and insight in data-centric, process-driven organisations such as NHS Digital and TSYS. Across my career I've focused on using data to reduce operational risk, improve decision-making, and streamline business processes. Skilled in SQL Server optimisation, Python, and BI platforms, with hands-on experience in cloud governance (Azure , Microsoft Purview) and intelligent automation.

Committed to continuous learning, with recent professional development in Microsoft Fabric, Power BI, and Databricks. My approach combines the rigour of engineering with the curiosity of data science: building systems that not only run efficiently, but also generate meaningful business value.

Key Skills & Methodologies

- **Data Engineering & Optimisation:** SQL Server (2012+), T-SQL, SSIS, ETL pipelines, query tuning, indexing, performance troubleshooting — delivering faster, more reliable data flows.
- **Analytics & BI:** Tableau, Power BI, SSRS, SSAS, data modelling, Microsoft Fabric (introductory training) — enabling data-driven decision-making through clear, accessible insights.
- **Automation & Programming:** Python, Terraform, PowerShell, VB/VBA, Java — applying automation to reduce manual processes, increase efficiency, and scale data operations.
- **Testing, Quality & Governance:** Python unit tests, tSQLt, Azure, GCP, Microsoft Purview — ensuring data integrity, compliance, and trusted governance across platforms.
- **Collaboration & Delivery:** Version control (SVN, TFS, GitHub), technical documentation, cross-functional teamwork — bridging technical detail with business understanding to drive process improvement.

Professional Experience

Redundancy & Professional Development **November 2024 – Present**

Following a company-wide restructuring, I focused on professional development and proof-of-concept projects to strengthen my expertise in cloud governance, automation, and modern data platforms:

- Built a proof-of-concept data product in Microsoft Purview to reveal the hidden financial cost of asset scanning. Since Purview doesn't natively surface cost insights, the POC demonstrated a method for attributing spend to governance activities — giving stakeholders clear visibility into "where the money has gone" and enabling more informed decisions about governance investment.
- Investigated approaches to generating production-like synthetic test data from metadata, tackling the challenge of testing without risking data leakage. Evaluated cost-effective methods for transforming sensitive datasets into safe, representative test data, with the goal of strengthening data quality assurance and compliance while maintaining realistic test conditions.
- Explored mathematical foundations behind machine learning, deepening understanding of modelling techniques relevant to future business applications.
- Completed targeted professional development courses:
    - *Introduction to Microsoft Fabric* – Microsoft Press (2025)
    - *Databricks Fundamentals Accreditation* – Databricks (2024)
    - *Power BI Essential Training* – LinkedIn Learning (2024)

Production Support Analyst, TSYS **March 2020 - October 2024**

Focus: Support, maintenance, and automation

- Enhanced SQL Server and Tableau environments, boosting reliability and implementing proactive monitoring to maintain consistent reporting performance and user confidence.
- Optimised execution plans and indexing, cutting query runtimes and improving responsiveness.
- Automated environment monitoring with PowerShell and later Python, reducing manual checks and saving analyst hours.
- Replaced fragile Tableau automation with robust Python workflows, boosting reporting reliability.
- Built Python processes for automated GCP uploads, streamlining data pipelines.
- Refactored legacy SQL/ETL processes to reduce technical debt, strengthen logging, and enable faster delivery.

Impact: Used automation and analysis to improve efficiency, cut manual effort and enable faster, more reliable insights.

Business Intelligence, TSYS **August 2016 – March 2020**

Focus: Development and data architecture

- Designed and maintained logical and physical relational data models supporting BI.
- Built and optimised ELT processes to improve data flows and reduce manual intervention.
- Migrated complex multidimensional data structures to flatter models, simplifying reporting.
- Automated Tableau reporting with TabCMD, scaling BI delivery.
- Proactively mitigated risks by leading change initiatives.

Impact: Applied automation and optimisation to BI development, ensuring business decisions were supported by faster, cleaner, more reliable data.

Database Specialist, NHS Digital **July 2011 - August 2016**

Focus: Data integrity, automation, and compliance in a national health setting

- Automated national data submissions by self-teaching Java, cutting turnaround from days to hours while improving accuracy.
- Continued to translate complex mathematical indicator specifications into SQL pipelines
- Developed and implemented tSQLt unit tests to safeguard legacy SQL routines, ensuring changes could be deployed with confidence. This reduced the risk of breaking critical processes, improved system reliability, and introduced modern testing discipline into long-standing codebases.
- Ensured integrity and compliance across datasets published nationally.

Impact: Increased speed, accuracy, and compliance in health data processing — embedding data scientist principles into a process-driven environment.

Contracting (ASDA, NHS Digital)

ASDA, VBA Developer **March 2011 – June 2011**

- Supported data acquisition process from Walmart to ASDA platforms

***Information Analyst,* NHS Digital** **January 2010 – October 2010**

- Redesigned and streamlined the in-house Indicator Packaging System, removing redundant code and simplifying workflows. Improved system versatility by focusing on essential functionality, reducing complexity introduced by years of contractor-driven additions.
- Designed, developed, and supported the Clinical Indicator Database (CID**)** to replace ad-hoc administration of indicators with a structured relational database. This allowed the team to streamline management of indicator metadata (e.g. data sources, stakeholders, and data stewards), improving efficiency, consistency, and accessibility of information.
- Translated complex mathematical indicator specifications into SQL pipelines, extracting and transforming raw source data into outputs aligned with official definitions. This required analysing standard operating procedures, selecting the most appropriate SQL functions, and building reliable data flows to ensure accuracy, consistency, and compliance.

Mushroom Advice & Analysis, Director / Laboratory Scientist **September 1999 – October 2009**

- Developed a UK industry-first multivariate model using NIR spectroscopy to predict compost chemistry with a 98% accuracy, transforming laboratory analysis into a faster, more reliable service to the industry.
- Monitored and validated the model continuously, ensuring scientific rigour and maintaining confidence in results used by clients.
- Acted as IT support and data domain expert, introducing innovative technologies to improve efficiency and reduce operational costs.
- Supported the consultancy arm of the business by providing a robust scientific and data-driven foundation, enabling consultants to advise clients with credibility and evidence-based insights.

Education

University of Dundee | Scotland | master's degree in data science 2014-2016
Sheffield Hallam University | UK | Bachelor of Science in Biomedical Science 1995-1999