



# Samuel McIlroy *Data Engineer*

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## Profile

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Data Engineer with several years experience in data and business intelligence development roles. Recently completed a combined MSc programme in data science and software engineering at Birkbeck, University of London (MSc Data Science). Focused study and final project on data engineering, distributed and cloud technologies.

## Education

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<b>Birkbeck, University of London</b> , <i>MSc Data Science, Merit</i> MSc Project: Twitter Sentiment Analysis: Big Data Streaming Processing (Distinction Grade)	2017 – 2019
<b>The Open University</b> , <i>Professional Development</i> Completed undergraduate modules in Computer Science and Statistics	2013 – 2016
<b>Sheffield Hallam University</b> , <i>PGCert Information Technology and Management</i>	2014 – 2015
<b>The University of Sheffield</b> , <i>BA (Hons) East Asian Studies</i>	2003 – 2007

## Professional Experience

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**University College London**, *Data Analyst Developer* 2015 – present  
Support for BI and Data functions in developing and maintaining custom databases, datasets and data pipelines.

- Data development (SQL, Python/Pandas, Microsoft SQL Server, MySQL)
- Data collection, automation and cleaning tasks (SQL/Python/Pandas)
- Data Visualisation (Tableau, Reporting Services)

## Key Achievements

- Supported a large scale merger with the Institute of Education. Developed a custom reporting database to allow for Institute of Education student data to be reported on alongside current UCL systems.
- Developed data processing systems/scripts, principally in Python and Pandas, to automate several manual processes at the University, saving the data team from several weeks of downtime per year.
- Co-lead an institution wide project to support and develop data skills at the University.
- Current lead of the UCL Python Data Working Group, a group working to support and promote the adoption of Python programming in data work at UCL.

**Birkbeck, University of London**, *Graduate Student* 2017 – 2019  
Completed studies in software engineering (Algorithms, OOP, Python, Java, Linux), databases and SQL, distributed and cloud computing (Hadoop, Spark, AWS), machine learning and data science techniques and applications.

**Sheffield Hallam University, Business Intelligence Developer**

2011 – 2015

- Customer Relationship data analysis and reporting
- Analysis of marketing web and email campaigns
- SQL query development
- Report development, Microsoft SQL Server Reporting Services

**Sheffield Hallam University, Senior Data Analyst**

2011 – 2011

- Analysis of widening participation campaigns, student and school engagement
- Business Intelligence report development

**Sheffield Hallam University, IT Support Analyst**

2008 – 2011

Maintenance and technical support of University student database systems and data warehouses

## Skills

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**Data Engineering****Software Engineering****SQL****Python****Pandas****Java****Scala****Git/GitHub****Data Pipelines and ETL****Database Systems****Cloud Computing****Machine Learning****Apache Spark****Apache Kafka****Data Visualisation****Web, Flask, JavaScript**

## Portfolio Projects

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**Twitter Sentiment Analysis: Big Data Streaming Processing** 

Design and implementation of a data intensive software application to acquire, store, process and visualise analytics from real-time tweets generated across London.

Developed skills and experience in common distributed computing technologies for working with large volumes of data at scale (Apache Kafka, Apache Spark), web frameworks (Flask, JavaScript) for data visualisation, containerisation/Docker and Linux.

## Organisations

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**UCL Python Data Working Group, Organiser and Lead**

Lead of meetup group to support colleagues across UCL in implementing and developing Python programming in their data work.

**UCL Data and Insight Community of Practice, Core Member and Project Lead**

Co-Lead on project to support the development of data skills at UCL.