

Jonathan Gray

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[GitHub Portfolio](#) | [LinkedIn](#)

Professional Summary

Experienced data and engineering leader with expertise in Python, machine learning, data engineering, and statistical analysis. Proven track record in leading diverse teams, managing engineering strategies, and delivering impactful solutions for humanitarian and developmental projects. Adept at building scalable software tools in challenging conditions, securing funding for innovative projects, and fostering cross-functional collaboration.

Key Skills

- **Leadership & Communication:** Engineering Strategy, Team Management, Stakeholder Engagement
 - **Programming & Tools:** Python, Postgres/SQL, PostGIS, Docker, Terraform, GCP, CI/CD, JavaScript/React, Version Control
 - **Data & Analytics:** Numpy, SciPy, Pandas, Polars, DuckDB, Jupyter, Statistics, Data Engineering
 - **Software Development:** ETL Pipelines, Interactive Visualizations, Open Source Development
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Professional Experience

Head of Engineering

Flowminder Foundation | 2022 - Present

- Led the engineering team, defining organizational engineering strategies and managing team performance and wellbeing.
- Led the development of a major public facing mobility data platform.
- Introduced sprint meetings and retrospectives to effectively manage workload across projects.
- Drove improvements to, and instituted a continual improvement process to organisational information cybersecurity posture.
- Collaborated with global partners, including funders and mobile operators, to meet humanitarian and developmental objectives.
- Maintained a hands-on role in software development, infrastructure design, and data engineering across multiple initiatives.

Data Scientist & Engineer

Flowminder Foundation | 2016 - 2022

- Designed and implemented analyses for telecoms and population data to support humanitarian efforts.
 - Introduced Deck.gl to create interactive, shareable visualizations, enhancing communication of complex data insights.
 - Standardized ETL pipelines and implemented continuous integration testing to streamline workflows.
 - Led the **FlowKit** project, securing \$1.2M in funding to develop an open-source data analysis toolkit.
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Notable Projects

Haiti Mobility Data Platform

FastAPI/React web platform for mobility data visualisation and sharing. [Visit the site.](#)

FlowKit

Comprehensive mobile phone data analysis toolkit built with Python, Postgres, React, Redis, and Docker. Streamlined big data analysis for low-resource environments. [View on GitHub](#)

mknotebooks

A mkdocs plugin for including Jupyter notebooks in mkdocs documentation. [View on GitHub](#)

Education

PhD in Complex Systems Simulation and Social Statistics

University of Southampton | 2012 - 2016

BSc in Computer Science with Artificial Intelligence (1st Class)

City University, London | 2009 - 2012

Publications

- Zagatti, G.A., Gonzalez, M., Avner, P., Lozano-Gracia, N., Brooks, C.J., Albert, M., Gray, J., et al. (2018). *A trip to work: Estimation of origin and destination of commuting patterns in the main metropolitan regions of Haiti using CDR*. Development Engineering, 3, 133-165.
 - Gray, J., Hilton, J., Bijak, J. (2017). *Choosing the choice: Reflections on modelling decisions and behaviour in demographic agent-based models*. Population Studies, 71(1), 85-97.
 - Gray, J., Bijak, J., & Bullock, S. (2016). *Deciding to Disclose: A Decision Theoretic Agent Model of Pregnancy and Alcohol Misuse*. Springer.
 - Mondragón, E., Gray, J., Alonso, E., Bonardi, C., Jennings, D. *SSCC TD: A Serial and Simultaneous Configural-Cue Compound Stimuli Representation for Temporal Difference Learning*. PLoS ONE, 9(7), e102469.
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References

Available upon request.