

Jonathan Gray

Head of Engineering | Engineering Manager | Technical Lead

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

Professional Summary

Engineering Leader with 3+ years experience managing cross-functional teams and delivering scalable data platforms serving 70+ organizations. Expert in **Python, cloud infrastructure**, and **data engineering** with a proven track record securing **\$1.2M+ in funding** and achieving **zero downtime** through strategic monitoring implementations. Specialized in **humanitarian tech, mobile network data analysis**, and **open-source development** with global stakeholder management across **Fortune 500 telecom partners**.

Key Achievements

- **Team Leadership:** Managed engineering teams up to 6 members with 95%+ retention rate since 2022
 - **Platform Impact:** Built mobility data platform serving 70+ humanitarian organisations globally
 - **Funding Success:** Secured \$1.2M FlowKit funding; authored \$2M Google AI research proposal
 - **Operational Excellence:** Eliminated data pipeline failures, achieving zero data gaps from previous regular outages
 - **Strategic Partnerships:** Delivered solutions in collaboration with major telecom operators: Vodacom, Vodafone UK, Telenor, MTN
 - **Open Source Impact:** Created mknotebooks tool with 137+ GitHub stars, established open source by default culture
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Core Technical Skills

Leadership & Strategy: Team Management • Technical Roadmapping • Stakeholder Engagement • Cross-functional Collaboration • Performance Management • Budget Development • Data Governance • GDPR Compliance

Development & Architecture: Python • JavaScript/React • FastAPI • PostgreSQL/PostGIS • Redis • Docker • Terraform • CI/CD Pipelines • ETL Architecture • Microservices • API Design

Data & Analytics: NumPy • SciPy • Pandas • Polars • DuckDB • Jupyter • Statistical Analysis • Machine Learning • Data Engineering • Business Intelligence • Deck.gl Visualization

Infrastructure & DevOps: Google Cloud Platform • Infrastructure as Code • Container Orchestration • Monitoring & Alerting • Network Security • Headscale VPN • Performance Optimization

Professional Experience

Head of Engineering

Flowminder Foundation | *London, UK* | 2022 - Present

Strategic Leadership & Team Management

- Lead engineering team of 6 across multiple humanitarian data projects with 95%+ retention rate since 2022
- Defined organizational engineering strategy and technical roadmaps for multi-year initiatives
- Implemented performance review processes and mentoring programs for career development
- Established sprint methodology and retrospectives, improving project delivery timelines and team productivity

Technical Excellence & Innovation

- **Architected and launched major public-facing mobility data platform** serving 70+ humanitarian organizations
- **Eliminated data pipeline failures** through comprehensive monitoring implementation, achieving zero data gaps
- **Led cloud infrastructure optimization**, reducing costs through strategic on-premises integration and resource optimization
- **Implemented CI/CD best practices** and automated testing frameworks across all engineering projects

Stakeholder & Partnership Management

- **Collaborated with Fortune 500 telecom partners** including Vodacom DRC, Vodafone UK, Telenor, and MTN
- **Managed relationships with international funders** and humanitarian organizations for technical solution delivery
- **Enhanced cybersecurity and data governance posture** through continuous improvement processes and GDPR compliance frameworks

- **Cross-functional leadership** with data science teams, creating optimal environments for advanced analytics

Data Scientist & Engineer

Flowminder Foundation | *London, UK* | 2016 - 2022

Product Development & Innovation

- **Secured \$1.2M funding for FlowKit project**, leading open-source mobile data analysis toolkit development
- **Pioneered interactive data visualization** using Deck.gl, transforming complex humanitarian data into actionable insights
- **Designed scalable ETL pipelines** with Airflow, Python, PostgreSQL, and Docker for telecoms and population data analysis
- **Standardised development workflows** implementing continuous integration testing and code quality frameworks

Technical Architecture & Delivery

- **Built comprehensive data analysis toolkit** (FlowKit) supporting humanitarian efforts in low-resource environments
 - **Implemented big data solutions** using Python, PostgreSQL, React, Redis, and Docker architecture
 - **Created shareable visualization platforms** enhancing stakeholder communication and decision-making processes
 - **Led technical implementation** for displacement and mobility analysis supporting global humanitarian response
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Notable Projects

Haiti Mobility Data Platform

FastAPI/React • MySQL • Docker • GCP

- **Public-facing web platform** for humanitarian mobility data visualization and sharing
- **Serves 70+ organizations** with real-time data insights and interactive dashboards
- **Implemented robust API architecture** supporting high-availability data access for emergency response
- [Live Platform](#)

FlowKit - Open Source Data Analysis Toolkit

Python • PostgreSQL • React • Redis • Docker • ZeroMQ

- **\$1.2M funded project** creating comprehensive mobile phone data analysis toolkit
- **Streamlined big data analysis** for humanitarian organizations in resource-constrained environments
- **90+ GitHub stars**
- [View on GitHub](#)

mknotebooks - Documentation Integration

Python • Jupyter • MkDocs

- **Open-source plugin** enabling Jupyter notebook integration in MkDocs documentation
 - **137+ GitHub stars** with widespread adoption across data science community
 - **Improved developer experience** for data science documentation and knowledge sharing
 - [View on GitHub](#)
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Education & Qualifications

PhD in Complex Systems Simulation and Social Statistics

University of Southampton | 2012 - 2016

BSc Computer Science with Artificial Intelligence (First Class Honours)

City University, London | 2009 - 2012

Selected Publications & Thought Leadership

- **"A trip to work: Estimation of origin and destination of commuting patterns..."** - *Development Engineering* (2018) - 50+ citations
 - **"Choosing the choice: Reflections on modelling decisions and behaviour..."** - *Population Studies* (2017) - 20+ citations
 - **"Deciding to Disclose: A Decision Theoretic Agent Model..."** - *Springer* (2016) - Behavioral modeling research - 7+ citations
 - **Open Source Contributions:** Active maintainer of multiple humanitarian technology projects with 200+ combined GitHub stars
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Additional Information

Data Governance & Compliance: GDPR compliance, ROPA creation, data protection frameworks

Languages: English (Native)

Security Clearance: Available upon request

References: Available upon request

Passionate about leveraging technology for humanitarian impact while building high-performing engineering teams and scalable technical solutions.