

Dylan A. Royston, PhD

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SUMMARY

- Data engineer specializing in scalable data platforms, distributed systems, and cloud-native infrastructure in production environments.
 - Extensive expertise in ML pipeline design and handling correlated multimodal datasets.
 - Strong technical communication skills and experience with fast-paced cross-functional teams.
 - Expert at making informed decisions under extreme ambiguity.
 - Passionate about building intelligent systems to solve meaningful technical and scientific challenges.
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EXPERIENCE

Senior Data Engineer | *Synchron* | Brooklyn, NY | **Dec 2023 - Sept 2026**

- Led full-stack design and implementation of data architecture, AI infrastructure, and cloud-native systems for medical device products and advanced AI/ML research in a \$200M Series D startup.
- Created data models and interfaces for querying targeted events through hundreds of hours of high-density multimodal time-series data, enabling detailed analytics and accelerating model training.
- Owned continuous development and improvement of always-on production data systems, enabling cross-functional analysis and improved product/feature development.
- Drove development of agentic AI tooling, infrastructure standards, and direct AWS collaboration for product development and internal research applications.

Data Engineer | *Manifold* | Boston, MA | **Sept 2021 - June 2023**

- Implemented high-throughput Python and Scala ETL pipelines in AWS, enabling production-scale processing and analysis of complex data structures.
- Developed infrastructure for managing interlinked raw datasets, preprocessing workflows, and downstream statistical and machine-learning pipelines to streamline research operations.
- Built scalable data platform components supporting distributed processing, ML workflows, and cloud-based analytics for high-value product data.

Postdoctoral Fellow | *University of Pittsburgh/UPMC* | Pittsburgh, PA | **Aug 2020 - Aug 2021**

- Developed Python-based data platforms integrating multimodal clinical datasets, advanced signal processing workflows, and secure handling of sensitive medical and PII data for research applications.
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EDUCATION

PhD - Bioengineering | *University of Pittsburgh* | Pittsburgh, PA | **Aug 2014 - Dec 2019**

BS - Engineering Science | *University of Virginia* | Charlottesville, VA | **Aug 2009 - May 2013**

SKILLS

Programming: Python, Scala, SQL, TypeScript, Next.js, React, shell scripting, Git version control.

Cloud & Infrastructure: AWS, GCP, cloud-native data and AI/ML infrastructure, Docker and containerization, Airflow pipeline orchestration, event-driven architecture, database design, SQL/noSQL systems, cloud security, CI/CD practices, infrastructure design, supporting/debugging deployed production systems.

Applications & Data Systems: Complex data processing and analytics, multimodal datasets, dimensionality reduction, statistical inference, classification and decoding systems, data visualization, user-facing dashboards and applications, audit trails, isolation boundaries, sensitive/PII data handling.