

Aayush Dutta

aayush-dutta.github.io | [in](#) LinkedIn | [G](#) GitHub

EDUCATION

University of Michigan, Ann Arbor, MI

Master of Science in Mathematics

Aug 2022 - May 2024

GPA: 4.0

University of Michigan, Ann Arbor, MI

Bachelor of Science in Computer Science and Honors Mathematics

Aug 2020 - May 2024

GPA: 3.95

- **Graduate Coursework:** Advanced Algorithms, Machine Learning, Probability Theory, Algebraic Topology, Differential Geometry, Commutative Algebra; *more: aayush-dutta.github.io*

TECHNICAL SKILLS

Languages: Python, C++, TypeScript, C#, Java, SQL, M

Tech: PyTorch, TensorFlow/Keras, scikit-learn, Docker, Kubernetes, REST/gRPC, .NET, Git, React, Node.js

EXPERIENCE

Software Developer

Sep 2024 –

Epic Systems

- Owned development of scalable back-end services for a large-scale healthcare interoperability platform, designing and maintaining NoSQL data models/workflows supporting **700M+ monthly patient record exchanges**
- Implemented deceased-status **CDA** transactions/notifications with document ingestion, deduplication, multi-factor recency logic, and end-to-end audit trails—supporting **110K+** mortality events annually
- Partnered with the state health departments of NY & MD to design **FHIR-based** consent management registries with bidirectional synchronization and **XCPD** patient matching; defined a 24-hour “last-known consent” fallback and batch reconciliation to mitigate state throughput limits
- Led cross-team remediation across **three teams** to correct **30M** mistransacted immunization merges caused by stale process state; built a detection & rollback utility with complex search logic, validated via sampling/stakeholder sign-off, and added better immunization merge logging and guardrails to prevent recurrence
- Led cross-team design and development of CODA (Cross-Organizational Data Accuracy) workflows: origin-org error reporting via SOAP/XML messages, with end-to-end audit trails to drive cross-org correction of patient data

Teaching & Grading (EECS 376, EECS 586)

Jan 2023 – May 2024

University of Michigan

- TA for **EECS 376**: led discussions, authored exams, held office hours (complexity, computability, cryptography)
- Grader for **graduate EECS 586**: class covering graph DP, LP duality, randomized and approximation algorithms

Solution Integration Intern

May 2023 – Aug 2023

FICO

- Built reusable ML-driven fraud detection accelerators, leveraging **Recursive Bayesian Estimation**, adopted across multiple enterprise client deployments
- Migrated a FICO legacy Loan Application Fraud solution to FICO’s cloud-based Platform Orchestration tool

Machine Learning Engineer, Intern

May 2022 – Aug 2022

Gravity AI

- Devised an end-to-end ML pipeline involving **Optical Character Recognition**, Tabular Data Extraction and text interrogation to automate data entry from images, saving clients **\$80K/yr**
- Architected an ML pipeline to perform Speaker Diarization (**TensorFlow**, **GMM Clustering**) and Topic Detection to segment videos into contextually split clips, saving clients **16+ hours** in editing per hour-long video

PROJECTS

HealthMCP [G](#) | *Python, FastMCP, OAuth2*

Dec 2025 –

- Designing and building an MCP server to securely ingest wearable and clinical health data into LLMs for personalized health intelligence; implemented 2 API endpoints + OAuth2 flow for Claude Desktop integration
- Integrating with open-source healthcare **FHIR** APIs to access lab-based biomarkers and clinical signals

ThermoTwin Anomaly Detection [G](#) | *Python, TensorFlow/Keras, scikit-learn, Docker*

Jan 2022 – May 2022

- Implemented LSTM on time-series sensor data from power-plant simulations / thermodynamic cycle data to predict transients and detect anomalies **~100x** faster than simulation baselines
- Constructed 2 additional DNN pipelines to predict end states and failure time using **TensorFlow/Keras**