Arihant Birani

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Education

Georgia Institute of Technology **May 2026 (Expected)**

Bachelor of Science in Computer Science, Minor in Mathematics — ***GPA: 3.5/4.0***

- **Relevant Coursework:** Data Structures & Algorithms, Operating Systems, Computer Networks, Databases, Computer Organization, Machine Learning

Technical Skills

Languages: Python, Java, C/C++, JavaScript/TypeScript, SQL, Bash
Frameworks: React, Node.js/Express, FastAPI, REST/WebSockets, PyTorch, scikit-learn
Databases/Cloud: PostgreSQL, MySQL, MongoDB, Redis, AWS (S3, EC2, Lambda), Azure (ADLS, Application Insights)
Tools & Testing: Linux, Git, Docker, GitHub Actions (CI/CD), Terraform, Postman, JUnit, pytest, Logging/Monitoring

Experience

American International Group **June 2025 - August 2025**

Data Science Intern *Atlanta, GA*

- Developed an LLM-based agentic pipeline to generate loss descriptions, reducing adjuster review time by **85%+.**
- Evaluated 100+ document-level field errors by Anthropic text extraction model across 5+ unstructured formats (PDF, HTML, etc.), conducting root cause analysis to diagnose inaccurate model outputs.
- Designed a structured error taxonomy and conducted frequency analysis on model-ground truth mismatches to guide fine-tuning efforts, resulting in a **30%** reduction in critical field extraction failure rates across underwriting submissions.
- Used transformer-based sentence embeddings to match DUNS identifiers across 500+ unstructured policy and claims documents, improving retrieval accuracy by **18%**, while greatly reducing manual review workload.

The Travelers Companies **June 2024 - August 2024**

Software Engineering Intern *Hartford, CT*

- Constructed the Get-Loss-Consultation API Endpoint for the OmniAct Web Application, retrieving user records corresponding to User IDs passed in as query strings, writing 20+ test case scenarios to verify its functionality.
- Queried **10k+** User Sessions using U-SQL from the OmniAct Production Database and displayed **40+** significant metrics on the central DynaTrace Dashboard, presenting 20+ new user insights in weekly meetings with the product team.
- Collaborated with QA analysts to align API schema design with UI requirements for seamless integration in production.
- Conducted End-to-End API testing by chaining multiple requests together in order to validate complex user journeys.

Projects

TravMatch — Mentor–Intern Matching Platform **June 2024 – August 2024**

- Built a full-stack web app to match Travelers mentors and interns using the Gale–Shapley stable-matching algorithm with preference lists and soft constraints (location, skills, availability).
- Designed a normalized SQL schema (mentors, interns, preferences) and REST endpoints for ingest, validation, and match execution; added input validation and structured error handling.
- Tested with a mock dataset of **500+** pairings and automated API scenarios in Postman; produced match summaries and audit logs for quick review by program coordinators.
- Implemented a React dashboard to upload CSVs, trigger runs, and review results with sortable tables and filters to resolve conflicts.

Predictive House-Price Forecasting Application **December 2024 – March 2025**

- Preprocessed the Kaggle House Prices dataset (1460 rows, 79 features) by imputing approximately 10% missing values, treating outliers, and normalizing skewed numerics to stabilize training and evaluation.
- Engineered features by one-hot encoding 20+ categorical variables and creating composite indicators.
- Trained gradient-boosted trees with XGBoost and regularized baselines, achieving CV RMSE $\approx$ \$22k and $R^2 = 0.90$, outperforming naive predictors by roughly **20%** with nested cross-validation to control overfitting.
- Deployed the final model behind FastAPI with input validation, structured logging, and a small metrics endpoint, delivering sub-second predictions suitable for production-style demos.