

RACHIT CHADHA

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Education

Georgia Institute of Technology

Master of Science in Computer Science, Machine Learning Track (GPA 3.9/4.0)

Dec. 2024

Atlanta, Georgia

University of Maryland

Bachelor of Science in Information Science, Data Science Concentration

May 2020

College Park, Maryland

Relevant Coursework

- Algorithms
- Database Systems
- Data Science
- Systems for ML
- Computer Vision
- Big Data Systems
- Machine Learning
- Statistics
- Data Visualization
- NLP

Technical Skills

Languages: Python, R, SQL(MS-SQL, Oracle), JavaScript

Frameworks: PyTorch, Scikit-Learn, Pandas, NumPy, Shapely, Plotly, Statsmodels, LangChain

Specialties: Statistical Inference, A/B Testing, Causal Inference, Forecasting, LLM Fine-tuning

Tools: Git, Jupyter, AWS, GCP, Docker, Airflow, Snowflake, MongoDB, PowerBI, Tableau, Spark, Hadoop

Experience

Data Scientist, GIS

May 2024 – Present

Turner & Townsend

New York City, NY

- Developed interpretable forecasting models (XGBoost, SVM) to predict infrastructure risks improving accuracy by 25%.
- Validated outputs via residual diagnostics; designed spatial analytics tools to optimize city-wide infrastructure planning.
- Streamlined Oracle SQL pipelines with data lineage and quality monitoring, cutting execution time by 15%.
- Led the deployment of dynamic, end-to-end PowerBI dashboards with DAX modeling, effectively visualizing KPIs.

Graduate Teaching Assistant

Aug. 2024 – Dec. 2024

Georgia Institute of Technology

Atlanta, GA

- Delivered technical instruction and office hours for 200+ students; supported curriculum for statistical ML topics.
- Designed and tested PyTorch, SQL, and Docker-based assignments on data visualization and modeling workflows.

Data Scientist, Analytics

Apr. 2022 – Jun. 2023

AMCL

New York City, NY

- Implemented anomaly detection systems on climate models using statistical EDA and Monte Carlo simulations.
- Automated real-time climate pipelines via Python (ARIMA, seasonal decomposition) and SQL enabling early warnings.
- Applied A/B testing and causal inference techniques to quantify effects of policy changes across public infrastructure.

Data Science Engineer

Aug. 2020 – Mar. 2022

Aegis Project Controls

Washington, DC

- Conducted time-impact and risk analysis for carbon footprint models using time series forecasting and simulation.
- Built operational dashboards in PowerBI; implemented regression and hypothesis testing to support strategic planning.

Data Analyst, eSports

May 2019 – Aug. 2019

Intel

Singapore

- Scraped and analyzed Twitch streaming data for APAC audience behavior via API integration and Python; visualized engagement trends for Intel Extreme Masters 2020 using PowerBI and presented analytical insights on industry trends.

Projects

Calibration-Driven Sparse Attention Fine-Tuning (C-SAF) | PyTorch, LoRA, LLaMA-3, Mistral, GPU Optimization

- Co-authored a novel PEFT method for LLMs reducing adapter size by **75%**, achieving a **23% speedup** in inference.
- Built calibration-based fine-tuning framework reducing GPU memory usage by **20%**; optimized attention sparsity.
- Evaluated across multiple tasks to benchmark generalizability and attention efficiency. [Link](#)

Fine-Tuning LLMs for C Programming Challenges | PyTorch, LLaMA-2, LoRA, QLoRA, CFG

- Fine-tuned transformer models on curated LeetCode C programming tasks with quantization and control flow graphs.
- Achieved **83%** solution success rate and reduced compilation errors by **21%** with optimized GPU performance. [Link](#)

Project Tidal (Geo-spatial Forecasting App) | Python, MongoDB, Spark, Mapbox.js, Node.js, AWS (EC2, S3, Athena)

- Real-time tool for forecasting tidal power using spatial modeling, hackathon winner amongst 1100+ participants.
- Ingested and processed NOAA buoy data; performed modeling for energy cost mitigation and emissions reduction. [Link](#)

Payout Forecasting for Stripe Connect | Time-series Prophet model, Pandas, NumPy, scikit-learn, Jupyter

- Built and validated a time series forecasting model to project payment volumes and detect anomalies in seasonality.
- Modeled payout variance and confidence intervals to inform operations and payment cadence optimization. [Link](#)