

Tamogh Nekkanti

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EDUCATION

B.E. in Computer Science and Engineering | Thapar Institute of Engineering and Technology, Patiala, India | CGPA: **8.91 / 10.0**

SKILLS

Languages: Python, Rust, Scala, C, C++

ML/AI: Transformers, NLP, GNNs, Bayesian ML, MCMC, Variational Inference, Computer Vision

Frameworks/Libraries: PyTorch, TensorFlow, Scikit-learn, NumPy, Pandas, OpenCV

Data Engineering: ETL, Apache Spark, Hadoop, Airflow, Luigi

Backend & Systems: Microservices, Domain-Driven Design (DDD), SOLID, REST, gRPC

Cloud & DevOps: Microsoft Azure, Docker, CI/CD

Databases: PostgreSQL, MySQL, Minio and S3 blob store

OS: Linux, macOS, Windows

EXPERIENCE

Machine Learning Engineer | BlackRock

Jul 2025 – Present

- Building a **unified ML platform** to register, train, tune, evaluate, and deploy **open-source, proprietary, and third-party models** across multi-cloud environments.
- Architected backend systems using **Domain-Driven Design (DDD)** and implemented core services in **Rust**, optimizing for performance and reliability.
- Developed a **custom model deployment service** that dynamically generates Docker runtimes from user-defined dependencies and application servers.
- Orchestrating **production-scale inference infrastructure** using **KServe** and **KEDA** for event-driven autoscaling.
- Built cloud-native infrastructure on **Microsoft Azure**, integrating **MinIO**, **PostgreSQL**, and distributed blob storage systems.
- Delivered **model inference-as-a-service**, handling full lifecycle from deployment to monitoring (**grafana and prometheus**)
- Integrated high-throughput artifact ingestion using **tusd** for large model and dataset handling.

Software Developer Intern | BlackRock

Jan 2025 – Jun 2025

- Developed and optimized **ETL pipelines for financial data**, forming the backbone of a production-grade trade library.
- Modernized legacy systems by integrating **LLM-based capabilities** into data workflows.
- Built a **test server framework** to enable rapid creation and validation of ETL pipelines without manual setup.

Open Source Developer (GSoC 2024) | Google Summer of Code

Mentor: Dr. Sbalocz Kali

May 2024 – Aug 2024 (Remote)

- Integrated **Bayesian inference methods (MCMC, Variational Inference)** into Neuroptimus for neuronal parameter estimation.
- Implemented **global optimization techniques** and custom loss functions for improved convergence and accuracy.

Student Engineer Intern (ThaparSat – ISRO Program)

Mentor: Dr. Mamta Gulati

May 2022 – Present

- Developed a **soil moisture prediction model** based on CNN and other models with satellite-derived features.
- Worked on **Denoising algorithms** for satellite retrieved data and **payload compression algorithms**.

PROJECTS

Chemical Reaction Prediction (Transformers + GNNs)

May 2024 – Nov 2024

- Designed a hybrid architecture combining **Graph Attention Networks and Transformers**.
- Built **local + global molecular embeddings** capturing structural and relational properties.
- Achieved **74% prediction accuracy** on reaction outcomes.

Bayesian Inference Integration (Neuroptimus)

GitHub: github.com/Tamogh123/Gsoc-24

May 2024 – Aug 2024

- Implemented **MCMC, Variational Inference**, and probabilistic models for neuronal parameter estimation.

Motion Amplification & Frequency Analysis (SIH 2023 Finalist)

GitHub: github.com/Tamogh123/Motion-amplification-and-Frequency-Analysis

Dec 2023

- Implemented **phase-based motion amplification** and frequency extraction from videos.
- Achieved **88% accuracy** in signal detection.