

# Aditya Khadkikar

firstnamelastname [at] gmail.com ◇ GitHub ◇ Portfolio

## Education

### Uppsala University

M.Sc. Data Science, Department of Information Technology

Uppsala, Sweden

Aug. 2024 - Jun. 2026

### University of Gothenburg

B.Sc. Software Engineering & Management, Department of Computer Science & Engineering

Gothenburg, Sweden

Aug. 2021 - Jun. 2024

## Experience

### AI Summer Intern - 2024

Ericsson R&D

Stockholm, Sweden

Jun. 2024 - Aug. 2024

- ◇ Worked with orchestration of LLMs in applications of telecommunication products and specs-information retrieval at Ericsson R&D. Used **LangChain** and **LangGraph** as key frameworks to bring forward a multi-agent RAG solution in Python, that evaluates completeness of user request, and appropriate retrieval of correct product data, as well as redirecting to different data sources depending on the nature of the query.
- ◇ Demonstrated familiarity with **Apache Jena (Fuseki)** as a graph database (schema understanding, query modifications) and **OpenSearch** as a vector database.

### Teaching Assistant

Chalmers University of Technology

Gothenburg, Sweden

Jun. 2023 - Nov. 2023

- ◇ Assisted the professor in supervising project groups during the upcoming iteration, as well as helped re-design assignments and material for students prior to course-start. Worked for the course DIT345 Fundamentals of Software Architecture.

University of Gothenburg

Aug. 2022 - Jun. 2023

- ◇ Conducting exercise sessions for students, resolving queries and revising concepts taught during lectures. Additionally, assisted in assignment and exam grading. Worked for DIT023 Mathematical Foundations for Software Engineering, DIT094: Mini Project - Team Programming, DIT033: Data Management, and DIT185: Software Analysis and Design.

## Projects

### Bayesian Inference in MRI Diffusion Tensor Imaging using Python (NumPy and SciPy)

Nov. 2025

- ◇ Contributed in a probabilistic posterior analysis project on the Stanford HARDI MRI dataset using stochastic and deterministic approximation methods (Rokem et al., 2015). I implemented the Metropolis-Hastings algorithm to approximate the posterior distributions of baseline signal values, diffusivity, anisotropy, and signal angle in a single voxel of brain tissue.

### Electric Power Consumption Forecasting using ARIMA-based Time-Series Modelling in R

May 2025

- ◇ Analysed electricity consumption data from Tetouan city, Morocco for one month ( $\approx 43,800$  data points). Patterns are observed using non-seasonal and seasonal Autoregressive Integrated Moving Average (ARIMA) models.

### Stochastic/Deterministic Simulations for Modelling Circadian-Rhythm Genetic Oscillators using NumPy

Apr. 2025

- ◇ An ODE model and a Random Walk (Monte Carlo Markov Process) was used, with the rates of change of all generated and binding proteins in the genetic oscillators simulated. Reproduced from "*Mechanisms of noise-resistance in genetic oscillators*" by Vilar et al.

### Advanced Convolutional Architectures on the MNIST-2D Dataset using PyTorch

Mar. 2025

- ◇ Model architectures such as Normal Feed-forward CNN, with Stochastic Gradient Descent + ADAM (quicker convergence, requiring **only  $\approx 1/8$ th** the number of iterations than w/o ADAM for reaching  $>90\%$  test accuracy). Other architectures implemented were **residual CNNs**, **bottleneck residual CNNs** and **DenseNet**.

### Marketpulse - AI Stock Market Trend Analysis App using React, Django, Tensorflow, Google Kubernetes Engine

Jan. 2024

- ◇ Personally contributed on training a deep neural network on analysing stock-based tweets to derive **sentiment of the future trend of a stock**. Additionally, worked on creating the **admin-side interface**, where new models can be uploaded, performance graphs and confusion matrices can be generated, and existing models be used as starting points to train new versions.

## Technical Skills

**ML/AI:** PyTorch, LangChain, NumPy, Pandas, Tensorflow

**Data Eng.:** PostgreSQL, MongoDB, Neo4j, Apache Spark, Apache Pulsar

**CI/CD:** Gitlab CI, Ansible, Docker

**Web:** Django, VueJS, React TS

## Volunteering

**Member of Development Division** - Uppsala AI Society

Aug. 2025 - Present

**Library Committee Representative** - Västmanlands-Dala Nation

Oct. 2024 - Dec. 2024

## Awards

**1st Place** - Capgemini Hackathon

Gothenburg, Sweden

May 2022