



Sayan Bhattacharya

Machine Learning Engineer

Results-driven Machine Learning Engineer with 3+ years of expertise in production ML systems, deep learning, and AI solutions. Demonstrated success in implementing scalable ML pipelines and predictive maintenance solutions achieving 87% optimization. Strong foundation in mathematics, signal processing, and extensive experience with cloud technologies (AWS, GCP, Azure). Proven track record in developing innovative AI solutions and leading cross-functional teams. Seeking to leverage technical expertise and leadership capabilities in Bertelsmann's Data Science Graduate Program.

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Social Links

Portfolio

LinkedIn

GitHub Profile

Software Skills

Programming Languages:

Python, Matlab, Javascript, Typescript, C#, C++

Deep Learning Frameworks:

TensorFlow, Keras, PyTorch, LLM

ML Libraries:

transformers, sklearn, PySpark, Pandas, Numpy, Wav2Vec, Whisper

Visualization:

Matplotlib, Seaborn, Dash, Streamlit, Grafana

CI/CD:

Git, Docker, Kubernetes, Kafka, FastAPI, REST API, MLflow

Cloud ML Platforms:

AWS/Azure SageMaker, S3, Athena BedRock, Huggingface, GCP, Airflow, Terraform

OS:

Linux, macOS, Windows

Certifications

C3.ai Data Integration

AWS Cloud Practitioner

Languages

English C2

German B1

Work Experience

Present

Apr. 2024

Freelancer, AI Engineer - Consultant

Bangalore, India (Remote work)

- Created prototypes and participated in the Deutsche Telekom IT Challenge, applying research to practical solutions using generative AI (GenAI) modules.
- Built automation workflows with Make.com and Zapier, reducing manual data entry by 30%.
- Enhanced chatbots with LLMs, boosting query resolution by 40%.
- Conducted workshops on automated solutions, training over 10 professionals.

Apr. 2024

May 2023

Machine Learning Engineer - Project Manager, AiVader GmbH

Ilmenau, DE (Contract)

- Led EConet project (Energy savings for private 5G networks).
- Developed interfaces for E2 nodes using Python, Golang, gRPC, and MongoDB (Data Engineering pipelines).
- Mentored a Master's thesis candidate in Traffic Steering.

Apr. 2023

Jan. 2023

Career Transition

Munich, DE

- Dedicated time to upskilling and aligning technical expertise with future responsibilities at AiVader GmbH, focusing on data engineering and project management.

Dec. 2022

Aug. 2022

Data Scientist - Consultant, Machine Learning Reply GmbH

Munich, DE

- Led technical deployment of cloud solutions, resulting in a 10% increase in customer acquisition and supported Marketing.

Jul. 2022

Aug. 2021

Wissenschaftliche Mitarbeiter, IMMS GmbH

- Achieved 87% reduction in feature dimensionality for predictive maintenance.
- Compared four automatic feature-ranking methods in predictive maintenance applications, using broadband statistics and narrow-band multiresolution analysis, employing models like LASSO, PCA, RFE, MLP, CancelOut, and Linear Regression

Aug. 2021

Apr. 2021

Wissenschaftliche Hilfskraft at Fraunhofer IDMT

- Developed a "Music Mood Estimation" framework for Music Recommendation Systems, achieving a 0.85 ROC-AUC score using Short-chunk CNNs and 0.82 with MobileNet on the MTAT-Dataset





Feb. 2018

Feb. 2017

Assistant System Engineer, Tata Consultancy Service, India

- Dot Net Developer; increased user satisfaction by 20% working with cross-functional teams.

Interests

-  Music
-  DAW
-  Podcasts
-  Mountaineering

Education

Present Nov. 2024	Further Education and Personal Projects Ilmenau, DE Worked on improving technical skills through online courses and personal projects, focusing on bridging into the gen AI domain.
Nov. 2024 Jul. 2024	Full-Stack Development BootCamp WBS CODING SCHOOL, Berlin, DE Focus on Node.js, JS, React, HTML, CSS, SQL, PostgreSQL, MongoDB, Scrum, and Agile methodologies TeleTalent - Talent Recruitment Portal Led development in a project innovating candidate evaluation by analyzing interview videos to generate statistical insights . Projects available on GitHub .
Mar. 2022 Oct. 2018	Masters in Communications and Signal Processing Technische Universität Ilmenau, DE GPA: 2.1
Apr. 2023 Jan. 2023	International Relocation and Readiness Kolkata, IN <ul style="list-style-type: none">Managed relocation logistics and cultural adaptation including german language.
Jun. 2016 Aug. 2012	Bachelors in Electronics and Communication Engineering Maulana Abdul Kalam Azad University of Technology, India Thesis: Investigation of Fan-out range in 45nm Technology. GPA: 2.0

Projects

Aug. 2019 Apr. 2019	Deployment of Retrieval-Augmented Generation (RAG) Project Google Cloud Platform (GCP) <ul style="list-style-type: none">Developed and deployed a Retrieval-Augmented Generation (RAG) project using Dockerized services in a Kubernetes cluster on GCP.Implemented scalable RAG workflows and managed deployment pipelines for enhanced data retrieval and system efficiency.Access the project: Project Link.
Jan. 2021 Dec. 2020	Sentiment analysis over IMDB dataset FG Softwaretechnik für sicherheitskritische Systeme, TU Ilmenau <ul style="list-style-type: none">Developed a deep learning algorithm for sentiment analysis as part of a group project.Familiarized with Keras, Sklearn, LSTMs, CNNs, and strategies to overcome overfitting by experimenting with hyperparameters.
Aug. 2020 Apr. 2020	Deep Unfoldings of Algorithms for Medical Imaging EMS, TU Ilmenau <ul style="list-style-type: none">Developed a machine learning algorithm for 1D image reconstruction.Generated synthetic data and reduced trainable parameters using Explainable AI techniques.Compared with state-of-the-art image reconstruction algorithms (FISTA).

Publications

Oct. 2018	Fan-out Range for Minimum Crowbar Current in Digital CMOS in 45nm Technology Published as an extension of Bachelor's thesis in IEEE Xplore Digital Library. DOI: 10.1109/WECON.2016.7993423, INSPEC Accession Number-17061456
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