YAWAR MAHMOOD

Data Scientist | AI Engineer | Applied Mathematician
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PROFILE

AI engineer and data scientist with 4 years building ML systems that run in production: real-time computer vision live in retail stores, LLM agents for document and process automation, and a consumer app scaled to 20K+ users. M.Sc. in Industrial Mathematics & Statistics (NTNU), with a focus on Bayesian modeling and forecasting.

TECHNICAL SKILLS

Languages:	Python, SQL, R, C++, Dart, JavaScript
ML / AI:	PyTorch, TensorFlow, scikit-learn, Hugging Face, LangChain, LangGraph, AI Agents, RAG, Computer Vision, LLMs, VLMs, Fine-tuning (LoRA), NVIDIA DeepStream, Edge Deployment
Frameworks:	Django, Flask, FastAPI, Flutter, React, Node.js
Cloud / DevOps:	Azure, GCP, Docker, Git
Data:	PostgreSQL, MongoDB, FAISS, pandas, REST APIs

EXPERIENCE

Freelance AI Engineer Jun 2026 – Present
Self-employed

- Automating slow, manual business processes for a restaurant client, including bookkeeping, purchasing, and marketing workflows, using Python, LLMs, and API integrations

AI Engineer Mar 2025 – Jun 2026
Astar Consulting Oslo

- Developed a real-time self-checkout system for NorgesGruppen, now live in 10 stores on NVIDIA Jetson edge devices, built on NVIDIA DeepStream with anti-theft detection and Kalman filter-based multi-object tracking, tuned for in-store conditions
- Fine-tuned DINOv3 with LoRA on augmented training data to cover rare products and difficult lighting conditions, improving accuracy of embedding-based product classification against a FAISS vector database of 10,000+ products
- Built an agentic command-line system for Rapp Bomek with LangGraph and LangChain, where users give instructions in natural language and the agent carries out multi-step tasks on high-security door project documentation, replacing manual review with automated extraction and structuring
- Designed a multi-objective optimization engine for a startup, combining interpretable regression tree models with NSGA-II Pareto optimization to balance regulatory limits, CO_2 and cost in concrete recipes

CPO, Full-Stack Developer & Lead Data Scientist Jun 2022 – Mar 2025
APIIR Trondheim

- Launched APIIR's B2C bike-fitting app from zero to 20,000+ active users across iOS & Android, rated 4.5⋆ on the App Store
- Designed proprietary fitting algorithms achieving centimeter-level precision, fusing pose estimation with biomechanical modeling to deliver personalized bike configurations
- Secured $300K+ in funding and drove end-to-end product strategy including roadmap, user research, and go-to-market
- Architected the full-stack platform (Flutter, Django, cloud infrastructure), building for scale from day one

Vice President & Head of Web Committee Mar 2021 – Mar 2023
Nabla – NTNU Student Association for Physics & Mathematics Trondheim

- Owned the technical stack (website, IT operations, and digital services) for a 500+ member student organization
- Co-led the board, responsible for strategy and member communications
- Started and ran an office kiosk for members, handling purchasing and budget, and organized the association's 17 May breakfast end to end, from budget to venue

Teaching Assistant Aug 2021 – May 2022
Norwegian University of Science and Technology Trondheim

- Led lab sessions and tutorials in Mechanics and Wave Physics & Fluid Mechanics, mentoring students through hands-on magnetohydrodynamic propulsion projects

Mentor May 2021 – Mar 2022
Mentor Norge Trondheim

- Mentored high school students in mathematics and science, helping them strengthen core skills and improve academic performance

EDUCATION

M.Sc. in Physics & Mathematics Aug 2020 – Jun 2026
Norwegian University of Science and Technology (NTNU) Trondheim

Specialization: Industrial Mathematics & Statistics

- **Thesis:** Bayesian spatio-temporal model (INLA) of bus ridership in Trondheim from 1.7M+ boarding records, with well-calibrated uncertainty (90% predictive intervals reached 92% coverage) and interpretable demand drivers, e.g. a 58% holiday drop at university stops
- **Coursework:** Advanced Statistical Methods (PhD), Statistical Learning, Time Series, Stochastic Modelling, Optimization
- **Award:** Best 1st Year Team, Nordic Collegiate Programming Contest (NCPC), 2020

Languages: Norwegian (native) · English (fluent) · Urdu (fluent) · German (basic)