

TAMANNA KUMAVAT

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OBJECTIVE

Master's student in AI and Data Science at the University of Zurich, with 7 years of full-stack development experience. Currently focusing on LLMs, NLP, and model evaluation. Passionate about developing robust, real-world AI applications that are contextually aware, reliable, and impactful.

EDUCATION

Master of Science: AI & Data Science

University of Zurich, Switzerland

Expected 2026

Bachelor of Technology: Computer Science

National Institute of Technology, Hamirpur, India

2011 - 2015

SKILLS

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| AI & Machine Learning | Python (NumPy, pandas, scikit-learn, SciPy, PyTorch, spaCy), Hugging Face Transformers, Computer Vision (OpenCV), NLP (NER, Text Classification), RAG, Deep Learning (CNNs, RNNs, Transformers) |
| Data Science | Data Collection, Cleaning, Feature Engineering, EDA, Statistical Analysis, A/B Testing, Data Visualization (matplotlib, seaborn), Data Pipelines |
| Databases | SQL (Oracle SQL, PLSQL), NoSQL (MongoDB), Advanced Querying |
| Full-stack Development | Front-End (HTML, JS, Angular, React), Back-End (Python – Flask/FastAPI, Java – Spring Boot), REST APIs |
| DevOps & Deployment | Git, Docker, Jenkins, Maven, CI/CD Pipelines |
| Tools & IDEs | Jupyter Notebook, Google Colab, VS Code, PyCharm, IntelliJ IDEA, Eclipse |
| Professional Skills | Team Collaboration, Agile Workflows, Analytical Thinking, Effective Communication |
| Languages | English (C1 – Advanced), German (B1 – In Progress) |

PROJECTS

LLMs for Temporal Dynamics in Sequential Data (Master Thesis, ongoing): Exploring the use of pretrained large language models (LLMs) and transformer architectures to model and forecast structured sequential data (e.g., multivariate time series, event streams, code traces). Supervised by Dr. Kyriakos Flouris (Cambridge University collaboration).

SwissText Analytics Shared Task 2025: Developed an NLP pipeline using Retrieval-Augmented Generation (RAG) with HyDE, multi-query, and hybrid search strategies for cleantech-related knowledge extraction. Achieved a 20% improvement in retrieval accuracy over existing methods.

Automated KYC Verification (Datathon – Julius Baer, 2025): Built an end-to-end pipeline to automate KYC verification from multi-source JSON data. Engineered features from structured text and documents (e.g., passports, KYC forms), reaching 90% test accuracy under 24-hour constraints.

Quantum Generative Modeling (Master Project): Developed QSC-Diffusion, a fully quantum diffusion framework for image generation using quantum scrambling and measurement-induced collapse. Achieved competitive FID scores with significantly fewer parameters, demonstrating the potential of quantum-native generative models.

Context-Aware Sarcasm Detection: Fine-tuned FLAN-T5 on a sarcasm-labeled tweets dataset, leveraging linguistic patterns and contextual embeddings. Improved nuanced sarcasm detection accuracy through sequence-to-sequence training and optimized loss functions.

ML, NLP, Deep Learning & LLM course Projects: Worked on CNNs, RNNs/LSTMs, transfer learning, adversarial training, transformers, and zero-shot learning. Applied to tasks like image classification, time series forecasting, and text generation using PyTorch.

SpeakEasy ChatBot: Designed a conversational agent capable of short dialogues using movie datasets. Combined knowledge graphs, embeddings, and multimodal techniques to simulate realistic conversations.

Short-Term Apartment Rentals in Zurich App: Created a personalized apartment search tool using a regression-based ML model. Integrated active learning and gamification to tackle cold-start problems without labeled data.

EXPERIENCE

Technology Analyst

Infosys Ltd (UBS AG)

Jun 2019 – Aug 2023

Zurich, Switzerland

- Led the development of the SPASA Portfolio Analytics platform from the ground up, covering system architecture, implementation, integration, testing, and deployment.
- Designed and implemented a microservice-based Service Orchestrator to automate server job execution and dispatch templated emails using Freemarker.
- Collaborated with business stakeholders to deliver continuous feature enhancements and ensure alignment with evolving requirements.
- Boosted application performance by introducing Lucene indexing and migrated scheduled jobs from Oracle JCS to Autosys for improved reliability.

Senior System Engineer

Infosys Ltd (UBS AG)

Sep 2017 – May 2019

Pune, India

- Led the complete migration of the legacy fat-client Order & Trade Management system (Osmosys) to a modern web-based platform, enabling real-time order book visualization.
- Developed critical modules, integrated backend services, conducted thorough testing, and managed production deployments.
- Partnered with stakeholders to design and deliver new features while providing end-to-end application support.

System Engineer

Infosys Ltd (UBS AG)

Jun 2016 – Sep 2017

Pune, India

- Built a front-end support tool within the Product Inventory Management (PIM) system to assist with debugging, log analysis, and data quality validation.
- Contributed to the successful migration of the Lead Offering Management application to AngularJS, enhancing performance, maintainability, and user experience.