

# M. Kerem Kurban

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**Machine Learning Engineer | MLOps & LLM Specialist**

## Top Skills

- **Multi-Agentic LLMs** - Maintained and productionized multiple AI software projects, including multi agent LLMs, RAG, and LLM-based KG extraction and analysis, resulting in grounded models with less hallucination and referencing custom enterprise datasets.
- **Semantic Search, Information Retrieval, and NLP** - Expert in integrating multiple types of unstructured datasets into AI-centric knowledge graphs and deploying GraphRAG applications for grounding and LLM reasoning
- **Data Science and Applied Mathematics** – 8+ years of experience in leveraging multiple data structures and systems across bioinformatics, neuroscience, and marketing to deliver actionable insights.

## Work Experience

### EPFL Blue Brain Project, Geneva, Switzerland

#### Machine Learning Engineer 04/2024-Present

- Led projects on semantic analysis of databases using Neo4j and Python, enhancing the ability to track market evolution and personalize AI for finding customer needs.
- Maintained and productionized multiple AI software projects, including LLM agents, agentic RAG, and LLM-based KG extraction and analysis, resulting in specialized chatbots using custom data for grounding.
- Productionized AI chatbots with GraphRAG on both unstructured data (pdf) and existing graph databases (neo4j)
- Productionized AI software suite on local server (Kubernetes) and cloud (AWS) in a collaborative team setting.
- Innovated multi-agent LLMs to improve user interaction with brain modeling applications, enabling natural language queries to perform complex analyses and construct models.
- Developed front-end applications for increased user experience in the chat interface using React, HTML, and CSS

### EPFL Blue Brain Project, Geneva, Switzerland

#### Scientific Software Developer 04/2021-04/2024

- Led projects on building and analyzing large-scale brain region models with 500k nodes using graph theory, graph neural networks, discovering statistically significant rich clubs, hubs, motifs and communities using Python
- Published multiple research papers on high impact journals and research conferences
- Maintained and productionized software using CI/CD pipelines for seamless integration and deployment.

### Neurolize, Istanbul, Turkiye

#### Software Engineer 06/2016 - 09/2016,

- Conducted marketing research using EEG, eye tracking and stress response, analyzing user interactions and brain signals to understand customer behavior over web, increasing sales by 36%
- Utilized computer vision to analyze CT scans of pancreatic cancers, achieving 64% accuracy in classifying patients with pancreatic cancer risks given a small-scale dataset.

## Education

BSc focusing on Data Science and Machine Learning on Biomedical Datasets (2018), Bogazici University, Turkiye

MSc focusing on NeuroAI and Deep Learning (2021), Bilkent University, Turkiye / EPFL, Switzerland

## Selected Certificates:

Neo4j Certified Professional (11/2024) , LLMOps (Deeplearning.ai) (04/2024), AI Agents in LangGraph (Deeplearning.ai) (09/2024), Building AI applications With Haystack (Deeplearning.ai,11/2024)

**Hobbies:** Badminton , Salsa & Bachata, Cooking, Board Games, Hiking