

ORHAN SÖNMEZ

AI Team Lead Candidate | Applied AI Problem Solver | PhD in Mathematics

CONTACT INFORMATION

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PROFESSIONAL SUMMARY

AI/ML Engineer and aspiring AI Team Lead with a PhD in Mathematics and over 7 years of extensive experience in data science. A strategic AI problem solver specializing in Generative AI, NLP, and translating complex business and clinical challenges into scalable technical solutions. Proven track record of managing the end-to-end product lifecycle of AI systems, from requirement gathering to deployment. Expert in building clinical decision support systems, LLM-based enterprise data agents, and NLP solutions using LangChain, Hugging Face, and state-of-the-art LLMs. Strong analytical communicator adept at bridging the gap between domain stakeholders (doctors, analysts) and technical teams. Deep understanding of data privacy regulations (HIPAA, KVKK, GDPR) and model performance tracking in real-world environments.

TECHNICAL & DOMAIN SKILLS

AI Product Management & Domain Expertise:
Complex Problem Solving • Product Lifecycle Management • Product Roadmap Strategy • Clinical Decision Support Systems • Clinical Validation • Health Regulations & Privacy (KVKK, GDPR, HIPAA, CE MDR awareness) • Cross-functional Team Leadership

AI/ML Frameworks & Tools:
Retrieval-Augmented Generation (RAG) • LangChain • LlamaIndex • Hugging Face Transformers • Databricks • MLOps (Model Drift Tracking, Performance Monitoring)

Large Language Models & NLP:
OpenAI GPT • Claude • LLaMA • DeepSeek • Qwen • Fine-tuning • Prompt Engineering • Intent Detection • Semantic Search • Structured Report Generation

Cloud, Infrastructure & Databases:
AWS SageMaker • vast.ai • Docker • REST APIs • Milvus • FAISS • SQL • Vector Embeddings

PROFESSIONAL EXPERIENCE

Quick and Quality Coding and Software— Lead AI Researcher / AI Product Developer

2022 - Present | Kayseri, Turkey (Hybrid)

National R&D Grant Proposal (TÜBİTAK) - Clinical NLP & Workflow Optimization (Recent) • Led the conceptualization and proposal writing for a TÜBİTAK R&D project focused on LLM-driven structured report generation from audio dictations for radiologists. • Outlined the high-level product roadmap, clinical validation steps, and regulatory compliance (KVKK/GDPR) strategies without compromising proprietary methodologies. • Demonstrated the ability to identify clinical pain points and design strategic NLP/LLM solutions bridging technical capabilities with medical domain requirements.

TÜBİTAK-Supported AI Assistant for Tabular Data Analysis • Led the end-to-end in-house development of a TÜBİTAK-backed conversational AI interface for querying structured databases using natural language. • Built a secure pipeline (SQL → CSV → LLM-generated pandas code → sandboxed execution) with automated query expansion and standardization. • Implemented strict guardrails preventing scope violations and unauthorized data access, reducing data analyst workload by 60% through self-service analytics capabilities.

Enterprise Data Analyst Chatbot for Major US Telecom (Databricks) (Ongoing) • Currently developing an advanced LLM-powered Data Analyst chatbot operating directly on Databricks for a leading US telecommunications company. • Architecting a secure pipeline that translates natural language into complex SQL/PySpark queries, executing them on massive enterprise datasets with strict data governance.

AI-Driven Healthcare Triage & Clinical Decision Support System • Developed an AI-powered clinical assistant for US rehabilitation centers, enabling physicians to access patient medical records, diagnoses, and treatment protocols through conversational queries. • Managed the end-to-end product lifecycle, collaborating closely with clinical teams to ensure the solution met real-world medical workflows. • Implemented a secure RAG architecture with GPT-4/Claude, processing 2K+ monthly physician interactions with strict HIPAA-compliant data handling and audit logging. • Established model performance metrics and drift tracking to ensure continuous clinical accuracy. • Contributed to the startup securing seed funding from US investors based on the productized AI capabilities.

Enterprise RAG System & Open-Source LLM Deployment • Architected and deployed an enterprise-grade RAG system processing 1K+ documents using LangChain, Pinecone, and Hugging Face embeddings. • Deployed and managed open-source LLMs (LLaMA, DeepSeek, Qwen) on AWS SageMaker and vast.ai, ensuring high availability and low latency (<2s response times).

Scientist Search & Discovery Platform • Engineered a hybrid search system (BM25 + dense vector embeddings) for academic researcher discovery, improving search relevance by 45%. • Built a re-ranking pipeline using cross-encoders, serving 10K+ monthly searches with <500ms latency.

Kodland — Python Tutor

2022 - 2023 | Part-time / Remote • Taught Python programming and AI fundamentals to 50+ students, developing curriculum covering data structures, algorithms, and introductory machine learning.

Upwork — Freelance Machine Learning Engineer & Data Science Specialist

2017 - 2022 | Remote • Delivered 30+ end-to-end ML and Data Science projects with consistent positive client feedback. • Built custom NLP pipelines for sentiment analysis, document classification, and entity extraction. • Specialized in healthcare analytics, financial forecasting, and customer segmentation, translating complex business requirements into technical solutions.

Cukurova University — Research Assistant & SQL Developer

2002 - 2010 | Adana, Turkey • Conducted advanced research in algebraic structures and combinatorics. • Developed and optimized SQL queries and database schemas for university information management systems. • Supervised undergraduate student projects and acted as a Teaching Assistant for Advanced Calculus and Database courses.

EDUCATION

Cukurova University — PhD, Mathematics, 2005 - 2010
Suleyman Demirel University — e-MBA, 2016 - 2018
Cukurova University — MSc, Mathematics, 2002 - 2005
Cukurova University — BSc, Mathematics, 1998 - 2002

CERTIFICATIONS

- AI Engineering Professional Certificate — IBM
- Generative AI Engineering with LLMs Specialization — IBM
- Machine Learning Engineering for Production (MLOps) Specialization — DeepLearning.AI
- Natural Language Processing Specialization — DeepLearning.AI
- Deep Learning Specialization — DeepLearning.AI
- Data Science Specialization — IBM

PUBLICATIONS

- Intersecting Families of Transformations (2025), *Journal of Algebra and Its Applications*
- m-potent elements in order-preserving transformation semigroups and ordered trees (2014), *Communications in Algebra*
- Combinatorics of elements in Tn and PTn (2010), *International Journal of Algebra*

LANGUAGES

- Turkish (Native)
- English (Advanced / Professional Working Proficiency - B2/C1 equivalent in technical & clinical contexts)

REFERENCES

- Ahmet Uyar, Professor in Computer Sciences, Staff Software Engineer at DataPelago, Email: ahmetuyar@gmail.com
- Kadir Peker, Professor in Computer Sciences, Senior Data Scientist at Pegasystems, Email: kadir.peker@gmail.com
- Bilal Vatansever, Professor in Mathematics, Retired, Email: bilalvatansever@outlook.com.tr