



Marko Kolarski

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TECHNICAL SKILLS

AI/ML: Transformers, PyTorch, TensorFlow, Scikit-learn **Development:** Python, Java, C#, SQL, Docker, Streamlit
Data Science: Pandas, NumPy, Matplotlib, Recall@K **DevOps & NLP:** Prometheus, Grafana, WordNet

EDUCATION

Faculty of Technical Sciences, University of Novi Sad
B.Sc. in Information Engineering

2021 – 2025 (Ongoing)
Novi Sad, Serbia

- **Focus:** Machine Learning, Data Science, Applied Mathematics, Software Engineering
- **Relevant Coursework:** Machine Learning 1, Adaptive Algorithms, Object-Oriented Programming, Time Series Analysis, Optimization Algorithms, Probability, Databases 1 & 2

PROJECTS

Concert Tour Bot ↗️

Apr 2025

RAG System for Concert Queries

Python, Streamlit, Docker, Gemini+SerpAPI

- Built a document-grounded **RAG system** for answering user queries about concert tours
- Developed CLI and **Streamlit** interfaces with optional live **web search** via **SerpAPI**
- Enabled provider switching (**Gemini API** / **HuggingFace**) and shipped **Docker-ready** builds

LLM Listwise Reranker for CodeRAG ↗️

Mar 2025 – Apr 2025

RAG System for Code Intelligence

Python, Transformers, WordNet, Gemini API

- Built a **RAG system** for answering natural language queries about **GitHub codebases**
- Achieved up to **100% Recall@10** using **query expansion** with WordNet and code-aware heuristics
- Integrated **Flan-T5** and **Gemini API** summarization with tunable latency–quality trade-offs

Computer Store Management System ↗️

Oct 2024 – Dec 2024

Java-Based Inventory System

JDBC, Oracle SQL

- Implemented **Java-Oracle SQL integration** via **JDBC** to ensure seamless flow between logic and database
- Modeled a **relational database** with 12+ normalized entities using **Oracle SQL Developer Data Modeler**
- Optimized complex **JOIN queries** in large aggregate reports for improved performance

OnlyBuns – Social Media Platform ↗️

Oct 2024 – Dec 2024

Full-Stack Web App

Django, React, PostgreSQL

- Automated tasks using **Django Background Tasks**, improving efficiency and reducing manual workload
- Enabled **real-time content distribution** using **RabbitMQ** fanout queues
- Integrated **Prometheus + Grafana** for live monitoring of API usage and system metrics

Religious Classification ↗️

Feb 2024 – Jun 2024

Neural Network Classifier

Python, TensorFlow, NumPy, Matplotlib

- Designed and assembled a custom dataset of 177 countries by combining flag imagery with 30 geopolitical features
- Implemented a custom **CNN** for image classification and a **fully connected neural network** for structured data
- Adapted and benchmarked **MobileNetV2**, observing a **60% accuracy gap** in favor of the custom CNN (**80% vs 20%**)