Nikolas Iliopoulos, BSc
Software Engineer

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Portfolio

Experience

Senior Software Engineer | TÜV AUSTRIA | 06/2024 – 11/2025

- Collaborate in an **agile engineering team** to design and build a **scalable** client portal, enabling users to **securely** access and manage their data in a distributed environment.
- Accelerated **platform evolution** by integrating multiple tools and services into a unified ecosystem, applying **system design** principles such as modularization, API standardization and clear service boundaries.
- Drive **architectural discussions** and feature planning, ensuring solutions follow **distributed system best practices**, support horizontal scalability and use effective **design patterns**.
- Deliver end-to-end technical ownership across **frontend** and **backend systems** using Javascript and Java Spring Boot, leveraging **caching layers** (Redis/in-memeory caches) to reduce latency and improve system responsiveness.
- Address complex tenchnical challenges through **performance tuning**, dependency refactoring and iterative improvements.
- Deploy services using **Docker** to ensure consistent and portable runtime environments.
- Developed robust **ETL pipelines** using Python and FastAPI, optimizing distributed data **extraction**, **tranformation** and **loading** workflows to improve **throughput**, **data cosnistency** and **reliability** across systems.

Software Engineer | Agile Actors | 02/2022 – 06/2024

- Led the migration from a monolithic system to a **distributed microservice architecture**, improving scalability, reliability and maintainability significantly.
- Designed and implemented **system design** components, including caching strategies with Redis and fault-tolerant services.
- Built a distributed **web-crawler** service for large-scale data enrichment, integrated into an event-driven architecture using Kafka.
- Optimized Spring Boot services with **multithreading** and custom thread pools to increase throughput and performance.
- Developed **CI/CD pipelines** using Jenkins and Docker and strengthened backend quality through **unit testing** with Spock.

Education

Bachelor's degree in Computer Science | 10/2018 – 02/2023 | Grade: 7.36/10 ~ 3 GPA
National & Kapodistrian University of Athens, Department of Informatics and Telecommunications

Key coursework & Skills: Data Structures & Algorithms, Multithreading & Concurrency, Systems Programming, Compilers
Programming: C, C++, Java, Python, Javascript, Assembly
Notable Projects:

- **InvertedSearchEngine (SIGMOD):** C++ Keyword Matching in documents. Implemented trees, hash tables and lists. (Achieved 1395ms single-threaded and 520ms with 5 threads)
- **Intermediate code LLVM creation** & **Compiler for MiniJava (subset of Java)**

Skills

- **Distributed Systems & Microservices:** Spring Boot, Kafka, Redis, concurrency, system design patterns
- **Backend Engineering:** Java, Python (FastAPI), Node.js (Express), ETL & data pipelines
- **Frontend Engineering:** React, Next.js, Javascript, TypeScript
- **DevOps & Cloud:** Docker, CI/CD, Observability (Prometheus, Grafana), Terraform
- **Data & Storage:** PostgreSQL, MySQL, MongoDB, ElasticSearch, AWS S3
- **Architecture & System design:** High-availability systems, fault-tolerance, caching strategies, load balancing, API design, micro-service architecture, design patterns
- **Testing & Quality:** Spock, automation frameworks, unit & integration testing, test-driven development

Projects

- **AI-Powered Property Management Email Assistant:** Built a Python-based AI system to automate property management emails, parsing tenant requests, generating **LLM-powered replies**, classifying intents (maintenance, lockout, rent), and creating workflow action tickets with **fully asynchronous IMAP/SMTP handling**.
- **BidPoint:** A platform where you can bid for items. **React.js (Javascript)** for the Frontend and **Spring Boot (Java)** for the Backend. Features: JWT, Admin Page, Crud operations, synchronized bids, Recommendation algorithm
- **Artificial Intelligence & Machine Learning Projects:**
  Transformers | **RNN with LSTM & GRU cells** | **FeedForward Neural Network**
  Berkeley Pacman: **Project 1** | **Project 2**
  Implemented depth-first & breadth-first, uniform cost, A* search, multiagent minimax and expectimax algorithms, as well as designing evaluation functions.

Languages

- Greek (Native language)
- English