Aleksa Simanic

Senior Software Engineer

Lajkovac, Serbia | aleksasimanic35@gmail.com | www.linkedin.com/in/aleksa-simanic-858902408/

SUMMARY

Software Engineer with 10+ years of experience building **full-stack applications**, **secure REST APIs**, and scalable cloud services. Skilled in **Python, TypeScript, JavaScript, React, Next.js, Node.js, Java/Spring Boot, and C#/.NET**, with experience across **Azure, AWS, and SQL/NoSQL databases**. My background spans **applied AI, RAG, automation**, manufacturing workflows, and payment-related applications. In independent client work, I take ownership of architecture, integrations, testing, and delivery, focusing on maintainable systems, reliable transaction handling, intuitive user experiences, and practical business outcomes.

Technical Skills

- **Languages:** Python, JavaScript, TypeScript, Java, C#, SQL, HTML5, CSS3, Bash
- **Frontend & Mobile:** React, Next.js, Angular, Vue.js, React Native, Redux, Tailwind CSS, Bootstrap, SCSS, Responsive Design
- **Backend:** Node.js, NestJS, Express.js, FastAPI, Django, Flask, Spring Boot, ASP.NET Core, RESTful APIs, GraphQL, Microservices, Asynchronous Processing, API Integration
- **AI & Machine Learning:** Generative AI, Large Language Models, OpenAI API, Anthropic Claude, Google Gemini, LangChain, LangGraph, AI Agents, RAG, Prompt Engineering, Tool Calling, LLM Evaluation, Workflow Automation
- **Vector Databases & Search:** Pinecone, FAISS, pgvector, Azure AI Search, Elasticsearch, Neo4j, Vector Search, Hybrid Search, Embeddings
- **Databases:** PostgreSQL, MySQL, Microsoft SQL Server, MongoDB, Redis, SQL/PLSQL, Database Design, Query Optimization, Data Modeling
- **Cloud & DevOps:** Microsoft Azure, AWS, Azure Functions, Azure App Service, Azure OpenAI Service, AWS Lambda, EC2, S3, Docker, Kubernetes, GitHub Actions, Jenkins, Terraform, CI/CD, Git, Linux
- **Payments & Security:** Payment API Integration, Transaction Validation, Third-Party Integrations, OAuth 2.0, JWT, Role-Based Access Control, API Security, Authentication, Authorization
- **Testing & Quality:** Pytest, Jest, JUnit, React Testing Library, Integration Testing, Unit Testing, API Testing, Regression Testing, Automated Testing, Code Reviews

WORK EXPERIENCE

Senior Software Engineer

Self Employed Jan 2023 – Present

- Architected and delivered full-stack web applications for private clients using **Python, FastAPI, TypeScript, React, Next.js, and Node.js**, connecting responsive customer-facing interfaces with scalable backend services and external business systems.
- Collaborated on **mobile-first fintech application design** for a confidential client, focusing on digital wallet workflows, card management, secure authentication, and integration requirements for payment-related services.
- Designed **REST API integration patterns** for account operations, transaction histories, and third-party payment services, emphasizing **TypeScript, Node.js, PostgreSQL**, structured validation, authorization, and reliable error handling.
- Developed AI-powered document assistants and workflow automation solutions using **OpenAI APIs, Anthropic Claude, LangChain, and LangGraph**, incorporating **RAG**, tool calling, and multi-step agent workflows.
- Built semantic retrieval pipelines using **pgvector, Pinecone, and Azure AI Search**, combining vector search with metadata filtering, contextual retrieval, and response validation to improve knowledge accessibility.
- Implemented asynchronous backend services using **FastAPI, NestJS, and PostgreSQL**, supporting enterprise integrations, scalable data access, and maintainable microservice-style application boundaries.

- Established cloud deployment workflows using **Microsoft Azure, AWS, Docker, Kubernetes, and GitHub Actions**, standardizing build, testing, and delivery processes across client projects.
- Strengthened application security through **OAuth 2.0, JWT, RBAC**, and API-level authorization while working directly with clients on technical decisions, production troubleshooting, and continuous improvements.

Full Stack Engineer
Craftcloud — Munich, Bavaria Feb 2020 – Dec 2022

- Developed full-stack manufacturing applications using **React, TypeScript, JavaScript, and Node.js**, supporting customer ordering, production visibility, and operational workflows for on-demand 3D printing services.
- Built backend services and **RESTful APIs** with **Python, Django, and Express.js**, connecting quotation, order processing, and fulfillment operations while reducing manual coordination between workflows.
- Improved application responsiveness by optimizing **React** components, reducing redundant API requests, and tuning database queries to make order and production information easier to access.
- Designed and maintained relational data models using **PostgreSQL and MySQL**, supporting customer records, manufacturing orders, production statuses, and operational reporting.
- Integrated external services through **REST APIs** and asynchronous processing, enabling automated order updates, fulfillment communication, and reliable data synchronization.
- Supported cloud deployments and production troubleshooting using **AWS, Docker, CI/CD, and GitHub Actions**, improving release consistency and simplifying environment management.
- Collaborated with product managers, designers, and manufacturing stakeholders in **Agile/Scrum** workflows, contributing to feature planning, automated testing with **Jest and Pytest**, code reviews, and iterative application improvements.

Full Stack Engineer
Meter Feeder — Pittsburgh, Pennsykvania Oct 2015 – Dec 2019

- Developed full-stack features for a digital parking payment and management platform using **JavaScript, React, Node.js, and HTML/CSS**, supporting parking sessions, payment-related customer interactions, and operational workflows.
- Implemented backend services using **Java, Spring Boot, and RESTful APIs**, connecting parking session management, transaction-processing functionality, and external business integrations.
- Built mobile-responsive interfaces with **React and Bootstrap**, improving the usability of parking payment flows and providing consistent functionality across desktop and mobile browsers.
- Integrated third-party **payment and parking management APIs**, implementing transaction validation, secure data exchange, and error handling to support dependable payment workflows.
- Designed and maintained **PostgreSQL, MySQL, and MongoDB** data structures for vehicle information, parking sessions, transaction records, and operational reporting.
- Improved production reliability through **unit testing, integration testing, Git**, debugging, and backend performance optimization, resolving issues affecting customer interactions and transaction-related workflows.
- Worked alongside engineering and business stakeholders to translate operational requirements into maintainable application features, participating in technical discussions, **Agile** development, documentation, and release support.

EDUCATION

Bachelor of Computer Science
University of Belgrade 2011 - 2015