Andrijana Miković



Full-Stack Software Engineer

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SUMMARY

Full-stack software engineer with 2.5+ years of experience building and deploying an enterprise Web GIS platform used by clients across many industries, including electricity distribution, sewerage networks, telecommunications and the oil industry, deployed for 10+ clients. Works across the whole stack: Vue.js and TypeScript/JavaScript on the frontend, Node.js and Java REST APIs on the backend, PostgreSQL, Oracle and MySQL databases, and Docker-based deployments. Helped lay the groundwork for the platform's new generation and built a self-hosted LLM configuration generator that cut configuration time from about an hour to a few minutes. M.Sc. in Software Engineering, University of Belgrade.

TECHNICAL SKILLS

Languages: JavaScript, TypeScript, Java, Python, SQL, C, C++

Frontend: Vue.js (Vue 2 & 3), Vuex, Pinia, Vuetify, React, Angular, D3.js, HTML5, CSS3, component libraries

Backend: Node.js, Express, Java, REST API development, JWT authentication, role-based access control (RBAC)

Databases: PostgreSQL, Oracle, MySQL, MongoDB, database migration

DevOps & Tools: Docker, Apache, IIS (reverse proxy), Windows Server deployment, Git, Jira, Agile

GIS, Data & AI: ArcGIS API for JavaScript, ArcGIS REST services, ArcPy, geoprocessing, LLM integration (Llama), prompt engineering, machine learning, NetworkX, Pandas

PROFESSIONAL EXPERIENCE

Software Engineer I — GDi Solutions Apr 2026 – Present

Enterprise Web GIS platform · Vue.js, Node.js, PostgreSQL, Docker, Python/ArcPy, Java

- Contributing to the migration of the platform backend from Java to Node.js and consolidating its database layer onto PostgreSQL, alongside a full frontend redesign.
- Laid much of the groundwork, together with the team, for the new configuration module and sewerage network module: code structure, configuration moved into JSON, and global error handling surfaced in the configuration module.
- Built many of the new platform's tools, moving most configuration into the UI, and contributed components to two in-house libraries: a Vue.js UI library replacing Vuetify and a shared widget library.
- Implemented JWT authentication and role/privilege-based authorization, and built REST API endpoints and business logic used across the platform.
- Containerized platform services with Docker for consistent, repeatable deployments.
- Built an AI-assisted configuration generator on a self-hosted Llama LLM: prompts combine the user's request with the configuration structure, and the output is automatically validated and repaired, cutting a configuration from about an hour to a few minutes (hardware-dependent).
- Built a Python geoprocessing tool for server-side data export for a telecommunications client; now generalizing it into a universal, ArcPy-only export tool.
- Maintain and extend custom features for enterprise customers still on the legacy Java/Vuetify version.

Junior Software Engineer — GDi Solutions Apr 2024 – Apr 2026

Java, Vue.js 2.7, Vuetify, Vuex/Pinia, ArcGIS API, MySQL, Oracle, PostgreSQL, Apache, IIS

- Built many map widgets and tools, including file upload, import/export, attribute tables, drive-time analysis, dynamic forms, filters and custom tools for police and traffic accident data, with Vue.js, Vuetify and the ArcGIS API for JavaScript.
- Worked on the sewerage network module (feature identification, table of contents, map loading fix, Java backend logic) and built custom widgets, backend logic and tools for an electricity distribution company.
- Implemented Java backend functionality (REST endpoints, database access, proxy logic, tool usage logging with a frontend viewer) and migrated databases from MySQL to PostgreSQL and Oracle.
- Deployed the platform to Windows client servers for 10+ enterprise customers: configured Apache, set up IIS as a reverse proxy, and migrated customer databases between environments. Worked closely with GIS specialists in-house and in GDi group offices in other countries.
- Handled production debugging and customer support; helped define the architecture of new modules and managed state with Vuex and Pinia.

Undergraduate Teaching Assistant — School of Electrical Engineering, University of Belgrade Oct 2023 – Feb 2024

- Assisted in machine learning labs (Python), guiding students through practical assignments and grading submissions.

Software Engineer Intern — Microsoft Development Center Serbia Mar 2022 – May 2022

- Built a proof of concept on the Maps team's web application for viewing and editing map data (C# backend): researched where to source external point-of-interest data, who to ask, how it was structured and how the existing system and codebase worked, then integrated it into the frontend with React.js and D3.js.

EDUCATION

M.Sc. Software Engineering 2023 – 2025

University of Belgrade, School of Electrical Engineering

Focus: big data processing, secure software development and cyber security, UI programming, social network analysis.

Thesis: Analysis of trends in world cinematography in the early 21st century (Aug 2025) — network and statistical analysis of ~1.8M titles (see Projects).

B.Sc. Computer Engineering and Information Technology 2019 – 2023

University of Belgrade, School of Electrical Engineering

Core coursework: algorithms and data structures, object-oriented programming (C++, Java), operating systems, system software, compiler construction, computer architecture, web programming, intelligent systems, machine learning, VLSI design.

Thesis: Machine learning for diabetes detection (Sep 2023) — compared KNN, logistic regression and decision trees on 100,000 samples, handling class imbalance with under-sampling and ADASYN.

SELECTED PROJECTS

Master's Thesis: Collaboration Networks in World Cinema — *Python, NetworkX, igraph, Gephi* 2025

Collected film data via the TMDB API and Rotten Tomatoes scraping, then modeled ~1.8M IMDb titles (2001–2024) as collaboration networks of actors, directors and production companies; analyzed centrality, community structure, clustering and assortativity, combined with statistical trend analysis.

Cake Shop Web Application — *Vue 3, Vuetify 3, Vuex, Vue Router, Firebase* 2024

Single-page app with separate customer and worker roles: customers browse the catalog, manage a cart and place orders; workers add products and staff and accept or reject orders with a preparation time or reason. Route guards protect authenticated and worker-only pages; data stored in Firebase Realtime Database.

Web Application Security Hardening — *Java, Spring Boot, Spring Security* 2024

Audited a Spring Boot web shop and fixed its vulnerabilities: SQL injection, XSS and CSRF (including a working CSRF exploit to demonstrate the issue), and added application logging and an audit trail of user actions.

Library Web Application — *Angular, TypeScript, Node.js, Express, MongoDB* 2022

Full-stack MEAN application with reader and admin roles: registration with admin approval, user blocking, basic and advanced book search, borrowing with history, ratings and comments, and book requests.

Systems Programming: Compiler, Toolchain & Kernel — *Java, C++* 2021 – 2023

Micro-Java compiler with JFlex/CUP lexical and syntax analysis; assembler, linker and emulator for an abstract CPU; multi-threaded kernel with time-sharing, context switching and semaphores for x86 and RISC-V.

More projects (machine learning, NLP, AI search, hardware) on GitHub and at andrijanamikovic.github.io.

ADDITIONAL

Languages: Serbian (native), English (professional working proficiency)

Achievements: Petnica Science Center — applied physics & electronics programs (2017–2019); led a school applied physics & electronics club; exhibited at the Belgrade Science Fair (3 years) and Vienna Maker Faire.