Nikola Petreski
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EMPLOYMENT

Software Engineer at MaddenCo **|** Evansville, Indiana   **February 2023 - November 2025**

-Shipped offline-first React Native applications (TypeScript, Expo, SQLite, Zustand). Designed hybrid rendering strategies: static pages at build time + dynamic islands, resulting in near-instant loads even with heavy interactive components. Built persistent global state management with Zustand middleware (SQLite storage adapter), automatically hydrating state on app launch and surviving app restarts. Created fully functional offline mode with local SQLite database, background sync, and encrypted persistence. Established retry queue system with exponential backoff and network status detection, ensuring 99.9% eventual consistency across mobile networks. New systems increased sales for customers in automotive logistics on average by over 15% through optimizing speed and reliability of critical points of sale.

-Engineered Nginx reverse-proxy cluster (Rocky Linux Server). Instantiated linux virtual private servers to support next generation development alongside hardware staff. Automated TLS renewal with Let's Encrypt, eliminating thousands of dollars of fees to external services. Introduced dynamic rate-limiting to prevent attacks in real time, utilizing token buckets and IP tracking with minimal loss in latency. Introduced zero-downtime blue-green deployments for multiple services simultaneously, integrated with server redundancy to prevent data loss. Pivoting to distributed linux servers saved over 1,000,000+ USD over two years as opposed to IBM mainframes, and increased user retention by 35% in the same time frame.

-Architected high-throughput REST API (TypeScript, Node, Bun, Hono) between legacy IBM AS400 and modern applications. Wrote fully type-safe API routes with Hono + Zod validation middleware, eliminating runtime validation errors and enabling automatic OpenAPI 3.1 documentation generation. Integrated Prisma + PlanetScale / Drizzle + Turso for edge-compatible database access, enabling global low-latency reads/writes without connection pooling issues. Implemented caching strategies with Hono's cache API + Cloudflare KV/Cache, reducing database load by 90% on frequently accessed endpoints. Middleware solutions accelerated development time, served as a layer between 10+ core codebases, and assisted in future efforts for vertical or horizontal scaling.

-Installed CI/CD pipeline for iOS/Android: automated builds, staging, and App Store/Play Store deployments. Designed multi-environment workflows (development, staging, production) with EAS secrets/branch mapping, enabling internal distribution and production releases. Integrated Fastlane with Expo prebuild and EAS Build to automate code signing, versioning, and submission for TestFlight and Google Play internal testing tracks. Managed Expo updates deployment pipeline: automatic code-push to production channel on main merges while keeping app store binaries in sync. Automated changelog generation and GitHub Releases using conventional commits and semantic-release, synced with EAS build metadata. Created self-service deployment scripts allowing team members to trigger staging/production builds with a single GitHub dispatch event. Reduced release time from ~2 hours of manual work to under 10 minutes for both iOS and Android builds.

SYSTEMS & SKILLS

- **Languages: TypeScript / JavaScript, C++, Python, SQL, Java, COBOL**
- **Mobile: React Native, Expo, SQLite, Zustand**
- **Web: NextJS, TanStack Start, Svelte, SolidJS, ThreeJS,**
- **Backend: Bun, Hono, Node.js, PostgreSQL, Redis, IBM i (AS400)**
- **Systems: Nginx, Docker, GitHub Actions, WASM, Reverse Proxy**
- **Testing: Jest, React Testing Library**
- **Electronics: Semiconductors, Superconductors, Electrical Engineering**

EDUCATION

Bachelor of Science, Indiana University (2021)
Certificate in Software Development, Ivy Tech (2022)