Natalie Bridgers

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ABOUT

Recent graduate with a B.S. in Computer Science, specializing in full stack development. Proficient in Rust, Go, TypeScript, and React. Interested in open-source, music, books, and the Web.

EDUCATION

Middle Tennessee State University — Murfreesboro, TN
Bachelor of Science in Computer Science — *Aug. 2020 – May 2024*
Highlighted Coursework - Web Technologies, Intro to Artificial Intelligence, Neural Networks, Algorithms and Data Structures, Operating Systems, Software Engineering, Theory of Programming Languages, Computer Architecture

NOTABLE PROJECTS

Muse | *Rust, Tokio, FFmpeg, Next.js, TypeScript, React, Docker, PostgreSQL, API*   🔗 Website - 🔗 GitHub Repo
- Developed a local music platform enabling gapless, on demand streaming, real-time transcoding, lyrics viewing, and intuitive library navigation, aimed at enhancing users' personal music management and discovery
- Implemented HMAC-based media authorization and OIDC authentication with PKCE code exchange and device auth flow, emphasizing extensibility through traits and security via adherence to best practices.
- Integrated APIs from Spotify and LastFM to enrich user experience with music metadata and song tracking
- Contributed to substantial full-stack development, API and product design, and containerization experience, streamlining development workflows and boosting overall system efficiency

Capybara Panel | *Kotlin, Ktor, Go, Next.js, TypeScript, React, Docker, PostgreSQL*   🔗 GitHub Repo
- Contributed to the development of a container management platform as part of a Databases course project
- Developed a microservice-like Go-based worker to handle docker container creation and runtime management
- Designed and implemented a user-friendly frontend with Next.js and TypeScript, providing real-time container creation, monitoring (machine and container resource usage, logging), and control
- Collaborated on a Kotlin-based PostgreSQL-integrated controller plane solution to persist metadata

Bluesky User Counter | *TypeScript, Deno, React, Next.js*   🔗 Website - 🔗 GitHub Repo
- Developed a server and web application to display real-time user statistics for Bluesky, a new social platform
- Achieved recognition with the project being featured on ZDNet and FastCo, highlighting the real-time nature and visual feedback, and used as a newsroom graphic for CNBC's Money Movers.
- Improved client-side performance by up to 50% through optimizing React hooks, reducing API calls and rerenders
- Implemented randomized request offsets on the client, and SWR-based caching on the server to evenly distribute server load and mitigate bottlenecks during high traffic, resulting in significantly reduced load at peak times

EXPERIENCE

Salesfloor, TA — Feb 2021 – Sep 2024
Walmart — *Murfreesboro, TN*
- Delivered excellent customer service by addressing inquiries, leading to improved customer satisfaction
- Collaborated with team members to optimize inventory management, resulting in reduced stock discrepancies

Discord Bot Developer (Recieved Grant) — Dec 2019 – May 2020
Audius
- Received a grant to further develop a Discord music bot, improving user engagement during listening parties
- Integrated Audius APIs without an official SDK, showcasing resourcefulness and strong API integration skills.
- Implemented user commands for queue management and player control, enhancing the listening party experience

TECHNICAL SKILLS

Languages: C/C++, Rust, TypeScript, JavaScript, Python, Go, Swift, HTML/CSS, SQL, Bash, Java, C#
Frameworks & Libraries: React, Next.js, Svelte, FastAPI, Tokio, TensorFlow, Keras, NumPy, Matplotlib, FFmpeg, PostgreSQL, ClickHouse, SQLite, LibSQL
Developer Tools: Git, Docker, Kubernetes, Zed, VS Code, Sublime Text, Jupyter, Xcode, Vim
Concepts: Data Structures, Algorithms, Machine Learning, Neural Networks, Networking, Systems Programming, Compiler Design, Functional Programming