

# Natalie Bridgers

✉ [nat@natalie.sh](mailto:nat@natalie.sh) | [in linkedin.com/in/nataliebridgers](https://www.linkedin.com/in/nataliebridgers) | [github.com/espeon](https://github.com/espeon)

## ABOUT

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Recent graduate with a B.S. in Computer Science, specializing in full stack development. Proficient in Rust, Go, and TypeScript. Interested in open-source projects, video streaming and transcoding, and music technology, and the Web.

## EDUCATION

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### 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

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### 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

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### 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

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**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