

# Ghislain Deffo

[ghislain.deffo31@gmail.com](mailto:ghislain.deffo31@gmail.com) • [Linkedin](#) • [Github](#) • [Blog](#)

## Work Experience

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### Volute

Senior Full Stack Engineer

Jan 2022 - Present

- Led the development of user experiences (Text, A/V, Media) to facilitate communications within discussion forums
- Coordinated across **3** teams, both internal and external, to build and integrate new subsystems concurrently
- Identified user friction and inquiries by parsing questions within posts in the forums using an LLM (GPT-3.5) and reporting them, to indirectly increase user interactions by **20%**
- Increased user engagement by leveraging Large Language Models with the RAG strategy to provide the ideal experience for searching through forums
- Sped up GitHub Actions build to detect and address issues quicker in the development process, from 12 min average to a **6 min** average
- Revealed business continuity gaps by developing Analytics widgets, using React, Recharts, Tailwind, NodeJs, and Azure Postgres Flexible Server
- Improved system stability by implementing end-to-end type-safe wrappers for emitting and handling system events by Azure Event Grid, improving development and testing efforts by **30%**
- Led efforts to migrate to Typescript, and change libraries and common practices to improve maintainability, over gradual refactorings, eliminating severe bug reports from 3 per quarter to **0**
- Developed CLI tools and scripts, in Rust and Nodejs, to automate developer tasks, improving velocity by **25%**
- Maintained an AKS (Kubernetes cluster) across **4-5** node pools hosted on Azure, resolving region migrations, investigating memory leaks, debugging Kubernetes deployments, etc...

### Volute

Front End Engineer

Nov 2021 - Jan 2022

- Optimized application performance, improving the Lighthouse score from **17 to 82**, achieving a speed index of **1.9**, by dynamically compressing images and applying windowing techniques to large lists
- Increased development velocity by moving from Create React App (CRA) v4 setup to Next.js 13, resulting in a **6x** reduction in build times
- Implemented an audio/video meeting feature, with webRTC, to facilitate user collaborations, used by over **100+** users

### Project New Social LLC

Tech Lead

Feb 2020 - Nov 2021

- Designed and led the development of a social media Progressive Web App to cheaply support Mobile and Desktop devices from one code base using Next.js, Node, Prisma, Postgres, and GraphQL
- Created and maintained a deployment strategy to serve our **1000+** of concurrent users for under **10 USD** a month, using Docker containers run on a VPS with Docker Swarm
- Collaborated closely with designers to create reusable and responsive UI components using CSS, Typescript, React.js
- Managed a typescript monorepo, using Turborepo, to reduce deployment and developer onboarding times by **30%**

### CollaboraIT Inc.

Core Java Instructor

Jul. 2020 - Oct. 2020

- Enabled the senior instructor in training cohorts of Java developers monthly, teaching core concepts and design patterns, increasing the number of cohorts to pass through by **50%**
- Taught advanced Object and Component design concepts such as threading, polymorphism, interface design, and SOLID principles
- Designed a curriculum, in tandem with other instructors to rapidly upskill junior developers to be ready for professional projects in just **8 weeks**

## PROJECTS

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### Linux Mouse Driver Engineer

maccel

Jan 2024 – Present

- Created an open-source mouse pointer acceleration driver for Linux, using kernel modules, earning **40+** github stars
- Leveraged geometric algebra, implemented in C with fixed point notation, to run the acceleration fastly and consistently
- Implemented the core driver as an input handler, being the **first** mouse acceleration driver for Linux that supports all mice
- Designed a Terminal UI, using Rust and the ratatui crate, to provide the best user experience over similar tools
- Managed onboarding and progress of **2** developers, maintaining expansive documentation to facilitate the process
- Guaranteed input lag within the range of **20** microseconds and **50** microseconds on average, measuring the time an input event takes to reach user-space, and analyzing stats with Python, pandas and matplotlib

### Compiler Engineer

rested

Apr 2023 – Apr 2024

- Developed an open-source domain-specific language (DSL) and interpreter written in Rust for easily defining and executing HTTP requests, providing a streamlined alternative to tools like Postman and curl for API testing, with **5000+** downloads
- Implemented a comprehensive command-line interface (CLI) with functionalities including running scripts, formatting code, creating snapshots, and managing environment variables, enhancing developer productivity and workflow efficiency
- Published as a Rust crate on crates.io and as an NPM package, facilitating cross-platform accessibility and seamless integration into various development environments
- Designed and incorporated features such as global constants, variable bindings, customizable request headers and bodies, file reading capabilities, and dynamic environment variable management within scripts
- Developed a Language Server Protocol (LSP) server and a Neovim plugin (restedlang.nvim) to provide syntax highlighting and IntelliSense support, improving code readability and developer experience

### Developer Tools Engineer

cnat

Feb 2024 – Mar 2024

- Created an open-source tool, using Rust, for systematically modifying class names across a codebase, addressing issues with outdated or inconsistent Tailwind CSS configurations, with over **4000+** downloads
- Published CNAT as a Rust crate on crates.io and as an NPM package, enabling wide accessibility for developers working in different environments
- Implemented features to automatically prefix Tailwind class names with a custom prefix (e.g., “legacy-”) to facilitate the gradual deprecation of old Tailwind configurations while maintaining backward compatibility
- Developed a user-friendly CLI interface with commands for prefixing class names, generating shell completions, and more, to streamline the tool’s usage and integration into development workflows

## Skills/Technologies

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100ms, Github Actions, Astro, AWS, Azure, C, Cypher, Cypress, Docker, Generative AI, Git, Go, GraphQL, Helm, Javascript, Jest, Kubernetes, Libraries, Linux, llama2, LSP, Lua, MongoDB, Neo4j, Next.js, Nginx, Node.js, Ollama, OpenAI, Playwright, Portainer, PostgreSQL, Prometheus, Python, React, Redis, REST, Rust, shadcn/ui, SDK, Shell, SQLite, Svelte, Tailwind, Tauri, Testing, Typescript, WebRTC, WebSocket

## Education

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Montgomery College

*Associates in General Studies, STEM*

University of Maryland

*Bachelor of Science in Computer Engineering*