Fedi Ben Abdesslem

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About Me

Computer Science engineering student and Systems enthusiast with deep interest in bridging the gap between rigorous mathematical theory and practical engineering, aiming to transform complex low-level mechanics into intuitive, artistic solutions that solve modern engineering challenges.

Education

- **National School of Engineers in Sousse - ENISo** — Sousse, Tunisia
  Master's-level degree in Applied Computer Science Engineering — *September 2025 - Present*
  - Experience working on engineering and research-oriented projects.
  - Focus on practical, project-based learning and real-world problem solving.
  - Coursework covering algorithms, operating systems, networks, databases, and web technologies.
- **Monastir Preparatory Engineering Institute** — Monastir, Tunisia
  Physics & Technologie Pre-Engineering Studies — *September 2023 - June 2025*
  - Intensive and highly selective two-year scientific program, serving as a preparatory course for the national entrance exams to engineering schools.
  - **Rank:** 99/769 in the national entrance exam for engineering schools.
  - **Courses:** Analysis and Calculus, Algebra, Physics, Chemistry, Computer Science, Engineering Science and Technology, French, English, mechanical design and manufacture.

Academic Projects

- **QuickFlow - AI-Powered Executive Assistant Suite**: (October 2025 - Present)
  ⇒ A privacy-first AI productivity suite that leverages local LLMs to automate meeting minutes generation and professional email drafting within a secure, full-stack architecture.
  - Contributed to the architecture of a secure, full-stack productivity platform leveraging local LLMs (**Ollama**) and **Spring AI** to automate meeting minutes generation and email drafting with zero data leakage.
  - Collaborated on the development of a decoupled architecture with a **React 18**/**TypeScript** frontend and **Spring Boot** backend, supporting a dual-mode AI pipeline for unstructured-to-structured data extraction.
  - Integrated **Google Gmail API** and **Microsoft Graph API** for seamless contact synchronization and direct email dispatching, featuring **OAuth2 authentication** with encrypted token storage.
  - Implemented enterprise-grade security using **Supabase** for identity management, custom **JWT** validation filters, and **AES-256 encryption** for sensitive OAuth tokens at rest.
  - Built a custom "Quick Mode" ingestion engine that parses raw notes and PDF/DOCX files, using prompt engineering to extract entities like attendees, decisions, and action items.
  - Designed an immersive UI using **Framer Motion** and **Tailwind CSS**, featuring real-time PDF previews and a rich text editing experience.
  - Contributed to the implementation of a local **RAG-lite pipeline** using Ollama and Spring AI, enabling sensitive corporate data processing without leaving the local infrastructure.
- **DineEase - Restaurant Reservation Platform**: (January 2026)
  ⇒ A complete web application for discovering and booking tables at restaurants and coffee shops across Tunisia.
  - Developed a full-stack reservation platform using **React 18**, **TypeScript**, **Node.js**, **Express.js**, and **MySQL**.
  - Implemented **RESTful API** endpoints for CRUD operations on reservations, users, and venue data.
  - Built **REST API** routes and integrated **MySQL** persistence via the **mysql2** driver.
  - Designed and implemented a responsive dark-themed UI with a custom **vanilla-CSS** design system and neon accents for desktop/mobile, with city-based filtering covering all 24 Tunisian states, with curated listings including ratings, descriptions, and contact details.
  - Developed a reservation flow capturing date, time, party size, phone, venue, and optional special requests (e.g., birthdays, accessibility needs).
  - Created an personalized for restaurant owner admin dashboard to manage reservations with search/filtering.
  - Set up a Vite-based build pipeline with fast dev hot reload and production builds, plus Node runtime serving for production.

- **Real-Time Container Security Visualization System**: (December 2025)
  - Designed and implemented a container behavior monitoring system providing real-time syscall and network-level observability for Docker containers without modifying application code.
  - Developed **eBPF programs (C)** using **BCC** to trace **Linux syscalls** and **TCP network** events, safely executed under kernel verifier constraints.
  - Built a **host-based monitoring pipeline** mapping process IDs (PIDs) to Docker containers using cgroups, /proc filesystem analysis, and **Docker Engine** metadata.
  - Implemented a **Python** event collector and enrichment layer to aggregate raw kernel events, correlate them with container context, and stream structured security events.
  - Demonstrated detection of abnormal runtime behaviors such as unexpected network connections, anomalous syscall patterns, and suspicious container interactions.
  - Emphasized low-overhead, read-only observability, ensuring minimal performance impact and strong isolation guarantees.

Skills Summary

- **Programming Languages**: Python, C/C++, Java, JavaScript/TypeScript.
- **Frameworks & Technologies**: eBPF, BCC , Spring Boot, React 18, REST APIs , Tailwind CSS , Spring AI , Fast APIs , Framer-Motion , Three.js.
- **Tools & Infrastructure**: Linux kernel , MongoDB, Supabase Auth, Ollama (Local LLMs) , Keycloak , Maven
- **DevOps & Tools**: Docker, Kubernetes, Git/GitHub.
- **Soft Skills**: Negotiation, Communication, Adaptability & Flexibility, Initiative & Persuasion, Time Management.
- **Languages**: Arabic (Native), English (B2), French (B1).

Certificates

Foundations of Cybersecurity - Google
Play It Safe: Manage Security Risks - Google