

Ahcen Chabbi

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EDUCATION

Higher National School of Computer Science (ESI)

Algiers, Algeria

Computer Systems and Software Engineering
2022 – Present

TECHNICAL SKILLS

Core Concepts: Object-Oriented Programming (OOP), Design patterns, Databases, Networking, Data Structures & Algorithms (DSA), Compilers

Languages: Java, Kotlin, PHP, C, SQL, JavaScript, TypeScript

Frameworks & Libraries: React.js, Next.js, Node.js, Express.js, Nest.js, Tailwind CSS, shadcn/ui

Databases: PostgreSQL, MongoDB, MySQL

ORM: Prisma

Tools & Dev Environment: Git, GitHub, VS Code, IntelliJ IDEA, Postman, Docker, Android Studio

Web servers: Nginx

Deployment: Vercel

PROJECTS

AI Notes – AI-Powered Note Assistant

A full-stack application enabling users to store, organize, and search notes using AI-enhanced semantic search and a modern chat interface. Supports Google OAuth and offers a polished, responsive UI.

- **Stack:** Next.js, Tailwind CSS, shadcn/ui, PostgreSQL (Prisma), Vercel AI SDK, Zustand, React Query, React Hook Form, Zod, Auth.js, Resend, Nuqs, Lucide, Vercel Blob, Arcjet, Vercel
- Live Demo | Source Code

ESIDEA – Collaborative Ideation Platform (Frontend Developer)

A full-stack collaborative ideation tool developed during a multidisciplinary project at ESI. Facilitates brainstorming and brainwriting sessions for academic projects.

- **Frontend:** React.js, Tailwind CSS, JavaScript, Axios, Socket.io
- **Backend:** Node.js, Express.js, TypeScript, MongoDB (Mongoose), JWT, Google OAuth
- **Tools:** Docker, Postman, Figma, ClickUp, Lucidchart, Google Suite
- Source Code

Mini Compiler Project

Designed a custom programming language and implemented a mini-compiler covering lexical and syntactic-semantic analysis phases. Built lexical analyzers to categorize source code tokens using regular expressions and finite automata, then extended the implementation to the full language grammar. Developed a syntactic analyzer based on a formal grammar, generating parsing tables and an abstract syntax tree, with operator precedence and associativity rules to resolve grammar conflicts. Implemented a symbol table to track variables and constants throughout compilation, along with a symbol search/insertion system. Generated intermediate code using the quadruples format, and implemented precise error detection and reporting (lexical and syntax errors) with exact source location tracking.

- **Languages:** C
- **Tools:** Flex, Yacc

- Source Code

University Research Lab Management Web Application

Designed and developed a full-stack web application for managing a university research laboratory, featuring a public interface (research projects catalog, publications database, team directory, equipment booking) and a secure administrative panel for managing users, roles, projects, equipment, and publications. Built with a class-based MVC architecture to ensure clean separation between data, business logic, and presentation. Implemented user authentication, dynamic content management, advanced filtering and sorting systems, a conflict-aware equipment reservation system, and automated report generation.

- **Frontend:** HTML, CSS, Javascript, PHP, Bootstrap 5.3, Bootstrap Icons, jQuery 3.7.1, Chart.js, jQuery DataTables, TCPDF
- **Backend:** PHP, MySQL
- **Tools:** xampp
- Source Code

AERIAL - Airline Online Check-In Mobile App

An airline mobile app for online check-in enables passengers to complete the check-in process remotely before arriving at the airport. Through the app, travelers can confirm their identity by scanning their passport, choose their preferred seat, declare their baggage, and obtain a digital boarding pass directly on their smartphone.

- **Frontend:** Kotlin Jetpack Compose, Navigation compose, Hilt DI, Room, Retrofit + OkHttp, Coil, ZXing QR, ML Kit Text Recognition (MRZ)
- **Backend:** Node.js, Express.js, TypeScript, PostgreSQL, Redis, JWT, Swagger, Firebase, Bullmq, axios
- **Testing:** Junit
- **Tools:** Postman
- Source Code

Expense Tracker with Expo Router & Express

A full-stack mobile expense tracking application built with React Native (Expo) on the frontend and Express.js on the backend. Track your income and expenses, manage transactions, and visualize your financial balance — all with a beautiful UI supporting dark and light themes.

- **Frontend:** React Native, Expo Router, NativeWind, TypeScript, Axios, React Query, Zod, React Hook Form, React Native Reanimated
- **Backend:** Node.js, Express.js, TypeScript, PostgreSQL, Redis, Clerk
- **Tools:** Postman
- Source Code

DevLog – Blogging Platform for Developers

A full-featured blogging platform where developers can create, edit, and delete posts with authentication, rich text editing, and a mobile-friendly UI.

- **Frontend:** React.js, Tailwind CSS, TypeScript, Axios, React Query
- **Backend:** Node.js, Express.js, TypeScript, MongoDB (Mongoose), JWT
- **Tools:** Postman
- Source Code