

Oussama Makhbouche

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PROFILE

Software Engineering student at KSU building systems at the intersection of AI and real-world infrastructure. Experienced in Flutter, Python, ML pipelines, and cloud-native AWS architecture with a focus on high performance and user-centric design.

EDUCATION

Bachelor of Science in Software Engineering Nov 2022 – June 2026 (Expected)
King Saud University (KSU) Riyadh, Saudi Arabia

- **CGPA: 4.84 / 5.00** • Fully-funded merit based scholarship

Preparatory Cycle — Computer Science Sept 2021 – June 2022
Higher National School of Computer Science (ESI Algiers) Algiers, Algeria

TECHNICAL SKILLS

- **Languages:** Python, Java, JavaScript (ES6+), Dart, SQL, C, C#
- **Software Engineering:** Clean Architecture, SOLID Principles, Agile/Scrum, Design Patterns, Unit Testing
- **Mobile & Web:** Flutter, React, FastAPI, RESTful APIs, State Management, HTML/CSS
- **Design & UI/UX:** Figma, Adobe XD, User Research, Prototyping, Editorial UI Design, Brand Identity
- **AI & LLM Stack:** RAG Architecture, Vector DBs (Pinecone), LangChain, LSTM Networks, Geospatial Analysis
- **Cloud & DevOps & Version control:** AWS (EC2/S3), Docker, CI/CD Pipelines, Git/GitHub, PostgreSQL, Firebase, Postman

WORK EXPERIENCE / INTERNSHIPS

Software Engineer Intern June 2024 – Aug 2024
Gates Control & Security Systems, Alstom Riyadh

- Automated gate system diagnostics with Python; analyzed detection logs to improve fault identification accuracy by 20% in real-world railway settings.

Freelance Full-Stack & Mobile Developer Nov 2022 – Present

- Delivered 6+ full-stack apps using Flutter and Firebase; optimized backend response times by 25%.

PROJECTS

JAR — Saudi Community Mobile Application Sep 2025 - Dec 2025

- **Role:** Lead Mobile Developer & UI/UX Designer. Directed a 4-month development lifecycle using Agile methodologies to architect a hyper-local neighborhood safety and community commerce platform.
- Implemented complex RTL layouts and culturally adapted UI/UX using Flutter; integrated real-time neighborhood safety alerts and localized marketplace modules.

CLIMENCE — Intelligent Air Quality System Sep 2025 - Present

- **Role:** System Architect & AI Engineer.
- Designed a national-scale environmental monitoring platform for the Ministry of Environment using AWS.
- Integrated IoT drone data, Sentinel-5P satellite imagery, and OpenAQ feeds into a unified dashboard.
- Developed LSTM-based multi-horizon forecasting models and a hotspot detection algorithm (Center of Gravity).

La Rose de Guelma — E-Commerce Platform Jan 2026

- **Role:** Lead Full-Stack Developer. Engineered a responsive digital storefront for a boutique shop, implementing secure payment gateways and an administrative dashboard for real-time inventory management.
- Optimized load times by 30% through efficient state management and asset optimization.

EXTRA-CURRICULAR ACTIVITIES

- **Winner**, Metaverse Responsibility & Innovation Hackathon. — Alfaisal University & the Ministry of Human Resources
- **Athlete Member**, KSU Swimming Team — 3rd place winner in Saudi Universities Competition.
- **Member**, Google Student Developers Club (GDSC), King Saud University.
- **Member**, Scientific club CSE, Higher National School of Computer Science (ESI Algiers).

CERTIFICATIONS & LANGUAGES

- **Technical Certs:** Linear Algebra for ML (DeepLearning.AI, 2026); Data Fundamentals (IBM, 2024).
- **Professional Certs:** Certified Lifeguard & First Aid Instructor (FASSAS, 2023).
- **Languages:** Arabic (Native); English (C1); French (C1); Spanish (A2).