Roudaina Kouka

Software Engineering Student | Cloud-Native, DevOps & AI

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PROFILE

Final-year **Software Engineering** student specializing in **Cloud Computing, DevOps, and DevSecOps**, with hands-on experience in **CI/CD pipelines, Infrastructure as Code (Terraform), containerization, Kubernetes, and automated security testing**, focused on secure deployments and infrastructure automation.

PROFESSIONAL EXPERIENCE

DevOps & Software Engineering Intern, *Inetum Tunisia, Microsoft Department* 07/2026 – 08/2026 | Tunisia

- **Designed** and **deployed** three Azure **DevOps** Server **CI/CD** pipelines for Dynamics 365/Dataverse, data migration, and .NET 8 API deployment to IIS, reducing deployment time by **40%** and enabling fully offline, on-premises releases.
- **Automated** validation, packaging, backup, restoration, health checks, and **rollback** across all **pipelines**.
- **Built** an internal **.NET** 8 developer tool (CRM ALM dashboard) centralizing deployment management, **Git-based versioning**, solution analysis, and pipeline orchestration.
- **Tools**: Azure DevOps Server, CI/CD, YAML, PowerShell, .NET 8, C#, ASP.NET Core, IIS, Dynamics 365, Git, SonarQube, REST APIs

Software Engineering Intern — Cloud & DevOps, *Pulse, Software-OS Department* 06/2026 – 09/2026 | U.S. (Remote)

- **Provisioned** a **cloud-native** data platform on **GCP** with Terraform, including **BigQuery**, Cloud Storage, IAM, Secret Manager, Artifact Registry, **Cloud** Run, and **Cloud** Scheduler.
- **Built** a secure data platform with **CI/CD**, GCS lifecycle policies, multi-source ingestion, BigQuery partitioning, Redis caching, least-privilege IAM, and automated disaster recovery.
- **Tools**: GCP, Terraform, BigQuery, Cloud Run, IAM, Secret Manager, Redis, CI/CD, IaC

Full Stack Developer Intern, *Pixemantic, Software Department* 06/2025 – 09/2025 | Tunisia

- **Implemented** AI-assisted medical note generation, a chatbot assistant, and OCR-based document processing for App4Doctors, a MERN-stack telemedicine platform.
- **Tools**: React, Node.js, Express, MongoDB, OCR, REST APIs

Marketing Intern, *Abinway, Marketing Department* 10/2024 – 03/2025 | Germany (Remote)

- **Contributed** to the North African Marketing Team by supporting outreach and communication with prospective candidates interested in **international** mobility opportunities.
- **Developed** targeted content for students and young professionals while thriving in a multicultural remote environment, strengthening **communication**, adaptability, and **teamwork**.

RESEARCH EXPERIENCE

Research Intern – Cybersecurity NLP, *Faculty of Sciences of Tunis, University of Tunis El Manar* 05/2026 – Present | Tunisia

- **Design** an **NLP** pipeline for **event extraction, temporal ordering, and causal relation classification** in CVE vulnerability descriptions.
- **Constructed** and manually validated an annotated dataset using **Label Studio**, covering 383 CVE descriptions.
- **Trained** and **evaluated** a **BERT-based binary classifier** for causal event relations after comparing alternative relation-classification formulations.
- **Co-author** a research manuscript targeting a peer-reviewed **AI/Security/NLP venue**.
- **Tools**: Python, NLP, Machine Learning, CVE/NVD, Label Studio

Research Contributor – Reinforcement Learning for Adaptive Learning, *CarthaPlay* 01/2024 – 04/2026 | Tunisia

- **Explored** a **reinforcement-learning** approach that uses students' answers and in-game actions to assess learning progress and adapt educational content.
- **Designed** an adaptive questioning mechanism that selects and reformulates questions based on students' responses and estimated learning state.
- **Shaped** AI-driven **educational games** combining student assessment, personalized feedback, and adaptive learning.
- **Tools:** Python, Reinforcement Learning, Machine Learning, React.js, JavaScript

EDUCATION

Bachelor's Degree in Software Engineering (BSE), *Faculty of Sciences of Tunis* 09/2022 – Present | Tunis, Tunisia

- **Passed and ranked 10/60**
- **Relevant Courses**: Cloud Computing, Distributed Systems, Computer Systems Design, Machine Learning & AI, Cybersecurity, Big Data, DevOps & Microservices

Integrated Pre-Engineering Program, *Faculty of Science of Tunis* 09/2022 – 05/2024 | Tunis, Tunisia

- **Passed and ranked 14/120**
- **Relevant courses:** Mathematics, Databases, Operating Systems

Baccalaureate Degree, *Abou Kacem Chebi, Kesra* 07/2022 | Siliana, Tunisia

- **Top regional ranking: 1/283**

PROJECTS

Secure Cloud-Native DevSecOps Platform

- **Designed** and **implemented** AWS infrastructure using Terraform, including VPC networking, private subnets, Amazon EKS, **encrypted** Amazon RDS for MySQL, and IAM roles.
- **Built** a **CI/CD** pipeline with Jenkins, SonarQube quality gates, and Trivy security scans for dependencies, **infrastructure** configurations, and container images, with images stored in Amazon ECR.
- **Implemented** Helm-based deployments and **GitOps** delivery with Argo CD, integrating Prometheus, Grafana, and **Alertmanager** for **monitoring** and **alerting**.
- **Key technologies:** AWS, EKS, Terraform, VPC, RDS, IAM, Secrets Manager, Jenkins, SonarQube, Trivy, Docker, ECR, Helm, Argo CD, Prometheus, Grafana.

Cloud-Native DevOps & CI/CD Platform Deployment

- **Deployed** a **containerized** three-tier application built with React, Node.js, and MongoDB on Amazon EKS, **leveraging** Kubernetes for **workload orchestration**.
- **Provisioned** AWS **infrastructure** using **Terraform** and **automated** application **build** and **delivery** with Jenkins, Docker, and Amazon ECR.
- **Implemented GitOps-based deployments** with Argo CD and **integrated** Prometheus and Grafana for **cluster** and application **monitoring**.
- **Key Technologies:** AWS EKS, Terraform, Jenkins, Docker, Amazon ECR, Kubernetes, Argo CD, Prometheus, Grafana, React, Node.js, MongoDB.

Netflix Clone Deployment with an End-to-End DevSecOps Pipeline

- **Automated** the **build** and **delivery** of a containerized **Netflix** clone on AWS using Jenkins and Docker.
- **Integrated** SonarQube, OWASP Dependency-Check, and Trivy to assess code **quality** and scan dependencies, filesystems, and container images for vulnerabilities.
- **Deployed** the application on Kubernetes, configured Argo CD for GitOps-based **delivery**, and **integrated** Prometheus and Grafana for operational **monitoring**.
- **Key Technologies:** AWS EC2/EKS, Jenkins, Docker, Kubernetes, SonarQube, OWASP Dependency-Check, Trivy, Argo CD, Prometheus, Grafana, Helm.

Cloud-Native Infrastructure Automation & DevSecOps

- **Provisioned** AWS **infrastructure** using **Terraform**, including private subnets with NAT, Amazon EKS, KMS-encrypted Amazon RDS for MySQL, Amazon ECR repositories, and IAM roles.
- **Automated** CI/CD with Jenkins, **integrating** SonarQube **quality** gates and Trivy scans for dependencies, **infrastructure** configurations, and container images before **publishing** images to Amazon ECR.
- **Implemented** Helm-based Kubernetes **deployments** and **GitOps** delivery with Argo CD, integrating Prometheus, Grafana, and Alertmanager for **monitoring** and **alerting**.
- **Key technologies:** AWS EKS, Terraform, Amazon RDS, AWS KMS, IAM, Jenkins, SonarQube, Trivy, Docker, Amazon ECR, Kubernetes, Helm, Argo CD, Prometheus, Grafana, Alertmanager, React, Node.js.

SKILLS

DevSecOps & Security: DevSecOps, Software Supply-Chain Security, OPA/Rego, TLS/mTLS, Security Auditing, SonarQube, Trivy
DevOps & Automation: CI/CD, Azure DevOps, Jenkins, GitHub Actions, Terraform, Ansible, ArgoCD, PowerShell, IaC
Cloud & Cloud-Native: AWS, Azure, GCP, Docker, Kubernetes, Microservices, Cloud-Native Architecture, REST APIs, Linux
Monitoring & Tools: Prometheus, Grafana, Git, GitHub, Jira, GitLab CI/CD
Software Engineering & Programming: Python, Java, C#, JavaScript, Node.js, C++, Go, Bash
AI & Machine Learning: Machine Learning, NLP, BERT, Reinforcement Learning, LLM APIs, LLMs, RAG, AI Agents, MLOps/LLMOps
Soft Skills: Analytical Thinking, Problem-Solving, Team Collaboration, Communication, Adaptability, Technical Report Writing, Research Literature Review

CERTIFICATIONS

AWS Certified Solutions Architect — Associate (SAA-C03)
AWS - Cloud Architecting — Training Badge
AWS Certified Cloud Practitioner
Certified Cybersecurity Educator Professional (CCEP)
Certified Red Team Operations Management (CRTOM)
CompTIA Security+
AI and Machine Learning — Virtual University of Tunis
Python Data Associate Certification — DataCamp

ACADEMIC & LEADERSHIP ACTIVITIES

IEEE CS Chapter FST, *DevOps Instructor* 10/2025 – Present

Optima Junior Entreprise, *Senior Business Development, R&D* 10/2024 – Present

ATIA Club FST, *Vice President* 09/2025 – Present

AWARDS & DISTINCTIONS

1st Place - AI Night challenge, *Association of Scientific Research & Innovation in Computer Science (ARSII)* 06/2026

1st place - Next BH hackathon, *BH Insurance* 04/2026

1st Place – D-Clickathon, *Digital Learning Lab (DAAL)* 01/2026

LANGUAGES

Arabic — Native | **French** — Bilingual | **English** — B2 | **German** — B1