

MACHAKA Mohammad

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PROFILE

Systems-minded software & cloud engineer pivoting into Systems Engineering via ISAE-SUPAERO SEN (2025–2026). I drive MBSE adoption by turning stakeholder needs into requirements, architecture, behavior analysis, verification & test planning, and clear interface contracts (ICDs/traceability). I build compelling demos and integrations in Python/TypeScript/Java, and operate data-intensive services with measurable SLOs and strong observability.

SKILLS

SYSTEMS ENGINEERING

Requirements • system architecture • behavior analysis • V&V & test planning • ICDs & interface mgmt • traceability • MBSE (SysML/UML; ARCADIA/Capella) • PLM/CM • DOORS-class tools (exposure)

SOFTWARE

Python • JavaScript/TypeScript (Node/Express) • Java • C++ • REST APIs • integrations & plugins • test automation

CLOUD & DEVOPS

AWS • Terraform • Kubernetes • Docker • GitHub Actions • IaC • CI/CD • GitOps

DATA & GEO

Airflow • Rasterio/GDAL • Google Earth Engine • STAC • MongoDB • Redis • PostGIS

ENABLEMENT

Stakeholder/customer demos • enablement sessions • documentation • runbooks

CERTIFICATIONS

AWS Solutions Architect — Associate (SAA-C03) (2025) Coursera/Stanford — Machine Learning Specialization (2020) Cisco — ICND1 (2019)

EXPERIENCE

GREEN PRAXIS | CLOUD & DATA ENGINEER • PERMANENT

Jan 2025 -- Present • Aix-en-Provence, FR

- Migrated static tiles to on-demand rendering (FastAPI+GEE): storage ↓80%, refresh <30 min, ingestion ↑6x.
- Established ICDs/SLOs across services; observability with dashboards & alerts; authored runbooks for ops V&V.
- Orchestrated Sentinel/Landsat DAGs (Airflow, Rasterio/GDAL, STAC); parse time ↓~80%.

AIRBUS | DATA ENGINEER • INTERNSHIP/APPRENTICESHIP

Jan 2023 -- Jun 2024 • Toulouse, FR

- Standardized multi-region HR datasets with quality gates: release time ↓~80%, manual errors ↓~90%.
- OPTIMATE exchange: elicited needs/constraints; mapped producers/consumers, interfaces & SLAs; delivered monitored data-flow.

MUREX SYSTEMS | SOFTWARE ARCHITECT • PROJECT LEAD

May 2021 -- Jan 2022 • Beirut, LB

- Built a log-analysis platform surfacing 50+ unseen error patterns; improved uptime and TTR.
- Led a 3-dev Scrum team; modular architecture, CI/CD, clear interfaces; gathered & refined requirements with clients.

Tech: AWS, Terraform, Kubernetes, Airflow, Python, C++, PostGIS, Docker, Jenkins, Azure DevOps, Redis, Node/TS

EDUCATION

ISAE-SUPAERO | MASTÈRE SPÉCIALISÉ® SYSTEMS ENGINEERING (SEN)

Sep 2025 -- Oct 2026 (expected) • Toulouse

- MBSE (SysML/Capella), requirements, architecture, V&V, dependability/safety, PLM/CM, EVM.

UNIV. TOULOUSE III — PAUL SABATIER | M.Sc. COMPUTER SCIENCE FOR AEROSPACE

Sep 2021 -- Jun 2024 • Toulouse

AMERICAN UNIV. OF BEIRUT | B.Sc. COMPUTER SCIENCE • MINOR BUSINESS ADMINISTRATION

Sep 2017 -- Jun 2020 • Beirut

- Awards: LCPC RU (2019); Valedictorian (2017/18); AGFE Scholar.

PROJECTS (SELECTED)

SUNSPEAR — Systems Engineer: CONOPS; needs→requirements; ICDs; V&V strategy; SRR/SDR packets; decision log & risk register.

HydroART — Systems Engineer: Mission architecture; subsystem decomposition; mass/power/data budgets; interface control; verification cross-reference matrix.