Mohamad El Moussawi

Geoinformatics Engineer · Physics Bachelor · Full Stack Developer

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Profile

Geoinformatics Engineering student at Politecnico di Milano with a bachelor's degree in physics. Lead Full Stack Engineer at RASID, built the RASID SaaS platform end to end. Research focus on SAR-based Earth observation.

Experience

Lead Full Stack Engineer, RASID SARL, rasid.ai — Aug 2024 – Present

- Built RASID SaaS platform
- Developer of a Python Raster Manipulator Library
- Developer of a Python Satellite Imagery Fetcher Library

Senior Member, GEOAI Research Group - CNRS Lebanon, geogroup.ai — Feb 2024 – Present
Supervising & interviewing Interns, Projects Management and lead the Quantum EO thread.

Freelance Full Stack Web Developer, Independent
Websites for clients including Archvilla, Glassinum, ARA S.r.l., GCG and Hakoyamasaki.

Workshop on Satellite Technology and Manufacturing, Lebanese delegation, Beijing, China — Mar 2024
Shared expertise with officials and professors, visited satellite production facilities.

Publications

Quantum Meets SAR: An End-to-End Quantum Implementation of the Range-Doppler Algorithm. *Proc. 6th International Electronic Conference on Remote Sensing (ECRS 2026)*, MDPI. sciforum.net/paper/34595

Earthquake Damage Mapping from Sentinel-1 Modeling Against Coherence Damage Proxy. *EarthArXiv*, preprint. doi:10.31223/X5480D

Quantum Meets SAR: A Novel Range-Doppler Algorithm for Next-Gen Earth Observation. *arXiv*, 2504.01832

Talks

Oral Speaker, ECRS 2026 (MDPI), session S2. SAR Remote Sensing — 19 Oct 2026
"Quantum Meets SAR: An End-to-End Quantum Implementation of the Range-Doppler Algorithm"

Education

M.Sc. in Geoinformatics Engineering, Politecnico di Milano, Milan, Italy — 2025 – Present

B.Sc. in Physics, Lebanese University, Faculty of Sciences, Lebanon — 2020 – 2023

Professional Certificate – Junior Web Developer, Le Cnam — 2020 – 2021

Selected Projects

Sentinel-1 SAR Phenology Pipeline — doi:10.13140/RG.2.2.14057.45929
Pixel-wise harmonic regression on Sentinel-1 time series to map seasonal vegetation cycles.

HelioStat — Climate Analysis API
REST API for climate analytics: heat stress, heatwave detection and long-term trends over cached weather data.

SAR View — QGIS Plugin — SARVIEW PLUGIN
SAR visualisation: converts intensity/amplitude to decibels and enhances contrast via statistical outlier removal.

Tenji — Tenji.org
LaTeX-based notes and summaries in physics and programming, Hosted for public.

Skills & Languages

Geospatial	GDAL, rasterio, GeoPandas, Shapely, pyproj, Xarray, Zarr, PostGIS, QGIS, Sentinel Hub
Remote sensing	SAR processing (Sentinel-1), time-series analysis, spectral indices, coherence-based damage mapping
Backend	Python, Django, Django REST Framework, Celery, Redis, PostgreSQL
AI / ML	PyTorch, Ultralytics
Web & cloud	React, TypeScript, Tailwind CSS, PHP, AWS (S3, EC2, CloudFront), Git, GitHub Actions, LaTeX
Languages	Arabic (native), English (fluent), French (competent), Italian (beginner)