

Charbel Toumieh

AI Engineer | Agentic Systems, RAG & AI Product Engineering

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PROFESSIONAL SUMMARY

AI Engineer specialising in production-grade LLM applications, agentic AI systems, and AI product engineering. Experienced leading the design and delivery of AI-powered products that automate workflows, integrate business systems, and deliver measurable commercial impact. Skilled in AI agents, RAG architectures, analytics platforms, and workflow automation, collaborating across product, engineering, and business teams.

TECHNICAL SKILLS

AI / LLM: Prompt Engineering, System & Task Prompting, Structured Outputs, LLM Evaluation, A/B Prompt Testing, Hallucination Reduction, Context Management, Tool/Function Calling, Self-Verification Workflows, Agent Reliability, AI Agents, Multi-Agent Systems, Agent Orchestration, RAG (Retrieval-Augmented Generation), Vector Databases, Semantic Search, LLM APIs (OpenAI/Anthropic), LangChain, LangGraph, LlamaIndex, MCP

ML & Data: Clustering & Customer Segmentation, Model Evaluation & Benchmarking, Experimental Validation, SQL/SQLite

Backend & APIs: Python, Flask, Node.js, PHP, REST APIs, API Integration, n8n, Java

Cloud & Computer Vision: AWS, Azure, PyTorch, YOLOv8, OpenCV, Tesseract OCR, EfficientNet-B0, Grad-CAM, Object Detection, Image Processing

Product & Analytics: Product Discovery, Stakeholder Management, KPI Definition, Experimentation, Roadmap Prioritisation, Requirements Gathering

Languages: English (Full Professional), French (Full Professional), Arabic (Native)

WORK EXPERIENCE

Gabriel & Co. - AI & LLM Engineer | New York, US (Remote)

Jun 2024 - Present

- Led the development and evolution of GREAT, an AI-powered quality assurance and analytics platform - replacing manual call review with automated scoring across 34+ agents and 3 channels (inbound, outbound, email), cutting QA effort about 90% and helping lift rep quality scores from the 80s into the 90s, surfaced through manager dashboards.
- Designed AI evaluation frameworks, scoring methodologies, and prompt architectures used to assess customer interactions at scale, improving evaluation quality by ~65% through experimentation and structured outputs.
- Architected and deployed AI agents, MCP servers, RAG pipelines, and workflow automation integrating 24+ internal tools, AWS data sources, and dashboards to support operational decision-making and quality monitoring.
- Developed AI-powered solutions spanning workflow automation, recommendation systems, retailer-brand monitoring, content generation, and operational analytics across multiple departments.

Chehab Lab - Artificial Intelligence Researcher | Remote

Jan 2026 - Jun 2026

- Researched Semantic Slice Selection for 3D medical imaging, evaluating 6+ pretrained vision and medical-image encoders (BioMedCLIP, DINOv3, DenseNet, ResNet, MedVAE, RAD-DINO) for representation quality.
- Designed experiments using cosine similarity, L2 distance, semantic-preservation, and compression metrics to quantify fine-grained representation collapse in medical AI models.

CMA CGM - Data Strategy & Engineering | Marseille, FR (Remote)

Jan 2025 - Oct 2025

- Enhanced clustering models for customer segmentation and route analysis, improving targeting accuracy by 33% via experimentation and feature refinement.
- Owned the roadmap and delivery of 2 core data products serving 100K+ users and supporting competitive intelligence across 100+ shipping routes and financial datasets, translating product needs into data/ML solutions.
- Engineered ETL pipelines and automated dashboards covering 50+ KPIs, reducing reporting time by 40% and giving stakeholders real-time performance visibility.

Meta-Funded Research Collaboration - AI & LLM Researcher | California, US (Remote)

Jan 2024 - Jan 2025

- Advanced a multimodal ECG model within a 7-researcher Meta-funded project, achieving high-accuracy reconstruction and Atrial Fibrillation prediction for paediatric care.
- Improved AI-assisted ECG reading accuracy by 20%+ via model evaluation, behavioural analysis, multimodal prompt/context experimentation, benchmarking, and validation.

BMB Group - Software Engineering Intern | Baabda, LB

Nov 2023 - Feb 2024

- Developed a .NET MAUI Blazor app with PepsiCo, cutting initial package size by 30% and adding offline Android SQLite support for stronger reliability and security.

Intalio - AI Engineering Intern | Naqqache, LB

Jul 2023 - Oct 2023

- Engineered a Flask OCR API (100+ daily requests) reaching 97% text-extraction accuracy with YOLOv8, OpenCV, and Tesseract OCR, boosting efficiency by ~35% via ML pipeline optimisation.

eMcREY - Software Engineering Intern | Dbayeh, LB

Mar 2023 - Jun 2023

- Created XML, Java, and MySQL applications on Oracle platforms within a 4-person team, automating 3 core business processes and trimming processing time by ~40%.

SELECTED PROJECTS

LoopGuard - AI/LLM Agent Reliability Framework | *Python Library*

- Built a framework-agnostic Python library that detects and mitigates infinite-loop and tool-calling failures in AI agents using semantic similarity, cycle detection, and declarative guardrails; built for LangChain, LangGraph, CrewAI, and RAG pipelines.

DermSense - Skin Disease Classifier | *Computer Vision / Explainable AI*

- Designed a medical computer-vision pipeline comparing SVM/HOG baselines with a PyTorch EfficientNet-B0 transfer-learning model and Grad-CAM explanations, served through a responsive web interface.

EDUCATION

University of Warwick - MSc Applied Artificial Intelligence | Coventry, UK

Expected Sept 2026

American University of Beirut (AUB) - B.E. Computer & Communications Engineering | Beirut, LB

LEADERSHIP & EXTRACURRICULAR

- Alcademy - AI lecturer & curriculum developer, AUB (2024-2025) · IEEE volunteer (2022-2023) · PythonDojo lead (2021-2022).