MOHAMED CHIZARI

Senior AI / Data Science Leader — Federal Transformation
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PROFESSIONAL SUMMARY

Senior AI and data science leader who ships production systems inside federal boundaries. Architected retrieval-augmented generation over large document collections on LangChain, LangGraph and Pinecone, evaluated on held-out query sets. Delivered and scaled the U.S. Census Bureau's data science transformation across both of its cohort paths and architected the migration of statistical production workloads from SAS to Python. Built enterprise workforce analytics spanning NASA's 17,800-person civil-service population across Headquarters and its ten Centers, and facility risk analysis across the Federal Protective Service's roughly 9,000 federal properties. Built the benefit-cost analysis behind the DHS counter-WMD consolidation that Congress established in statute as the CWMD Office. Nearly two decades in technical and analytical roles, beginning in physics research; most of the last decade in federal work.

PROFESSIONAL EXPERIENCE

CEO & Chief AI Architect | **Seven Sky Consulting** **2025 – Present**

Washington, DC · Independent AI/ML consulting practice

- Architected production retrieval-augmented-generation pipelines over large document collections using LangChain, LangGraph, Pinecone and GPT-4, evaluated on held-out query sets. Deployed across federal compliance and enterprise knowledge-management use cases.
- Built agentic AI orchestration workflows on LangGraph with tool-calling for document extraction, policy analysis and multi-step reasoning.
- Designed and ran a multi-agent operating system on Claude for my own operations: modular agent skills under a one-owner rule, file-based locks and handoffs that keep concurrent sessions from overwriting each other's work, and scripted gates (zero-loss install audits, pre-send checks, claims verification) that stop a release on any unverified figure; every rule traces to a dated, measured incident.
- Founded SeeDeep.ai, a computer-vision product for AI video analytics and anomaly detection, built on PyTorch and YOLO.
- Delivered Python and Plotly Dash analytics products and executive dashboards; advised on AI strategy, model-risk governance and transformation roadmaps.

Data Science Transformation Lead | **U.S. Census Bureau (via Orus Group)** **2020 – 2024**

Washington, DC · Contract engagement, held at the same time as the LMI roles below

- Delivered and scaled the Bureau's Data Science Training Program across both of its cohort paths, the Data Science Generalist Path and the Machine Learning Specialist Path.
- Architected the migration of statistical production workloads from SAS to Python, aligned to the Bureau's published commitment to transition legacy systems to open source, and established standards for statistical analysis, time-series modeling, automated reporting and MLOps.
- Led R&D on generative AI and LLM evaluation; built interactive Plotly Dash dashboards for senior leadership.
- Mentored junior and mid-level data scientists and established enterprise code-review practices.

Operations Research Analyst | **NASA Headquarters (via LMI)** **2022 – 2024**

Washington, DC · Contract engagement

- Built workforce analytics spanning NASA's 17,800-person civil-service population across its ten Centers and Headquarters, during a period when NASA ranked #1 among large agencies in the Partnership for Public Service's Best Places to Work rankings, a streak running 2012 through 2024.
- Designed statistical models and Tableau and Python dashboards for workforce composition, retention and mission-directorate resource optimization.
- Partnered with NASA HQ leadership on data-governance standards and executive reporting.

Operations Research Analyst | **Federal Protective Service (via LMI)** **2020 – 2022**

Washington, DC · Contract engagement

- Contributed to updating FPS's facility risk-assessment approach (internally designated OpRA), aligned to the Interagency Security Committee Risk Management Process and Facility Security Level framework, across FPS's portfolio of approximately 9,000 GSA-controlled federal facilities.
- Built statistical scoring and prioritization models over facility risk and threat data, integrating threat-signal analytics with FPS operational security data.
- Implemented threat-likelihood scoring and Excel/VBA/Solver optimization to support protective-officer deployment planning within FPS's fee-funded operating budget.

Senior Associate, Public Sector | **VA and FAA (via Grant Thornton LLP)** **2018 – 2019**

Washington, DC · U.S. Department of Veterans Affairs (OIT CFO and CIO organizations) and the FAA

- Supported the VA Office of Information and Technology's CFO and CIO organizations under Grant Thornton's management-support task order: revised position descriptions and built a skill-matching model that pairs employee skill sets with position requirements, to cut backlog and attrition.
- Built an attrition and retirement forecasting model on FAA separation records for air traffic control and Airway Transportation Systems Specialist staff, using OLS, logistic regression and Cox survival models: each employee's chance of leaving in each of the next three years, hiring needs by location, and the training budget that follows.
- Skill matching built on matrix-based skill-to-requirement scoring under availability constraints, the same bilinear structure that underlies modern embedding retrieval.
- Stack: R, Python, SQL, Excel/VBA optimization, Tableau executive reporting.

Operations Research Analyst | **U.S. Department of Homeland Security** **2016 – 2017**

Washington, DC · Office of the Chief Financial Officer · Counter-WMD program analysis

- Built the benefit-cost analysis supporting consolidation of two small DHS components, the Domestic Nuclear Detection Office and most of the Office of Health Affairs (FY2017: 127 and 86 FTE actual; $352.5M and $123.5M enacted), under the government-wide reform tasking of Executive Order 13781 and OMB M-17-22.
- DHS executed the consolidation under Homeland Security Act section 872 authority in December 2017; Congress established the CWMD Office in statute the following year under P.L. 115-387.
- Challenged a renewed proposal to upgrade the BioWatch biodetection system during budget review, citing its narrow coverage (six agents) and its 12-to-36-hour detection time. DHS cancelled the upgrade effort in September 2018 on cost and false-alarm grounds.
- Developed Excel/VBA/Solver budget-allocation models supporting departmental resource planning.

Industrial Engineer | **McRae Industries, North Carolina** **2015 – 2016**

Operations Research Analyst | **U.S. Army / NC State University Computer Science Dept., North Carolina** **2012 – 2013**

Data Analyst | **Tehran Polytechnic (Amirkabir University of Technology), Tehran, Iran** **2007 – 2010**

Undergraduate physics research · X-ray radiation modeling with MCNP (Monte Carlo N-Particle) · led a nanotechnology physics project

TECHNICAL SKILLS

AI / ML: LLMs (GPT-4, Claude, Llama), RAG, LangChain, LangGraph, agentic orchestration, prompt engineering, Pinecone, FAISS, embeddings, PyTorch, TensorFlow, scikit-learn, XGBoost, YOLO, computer vision

Programming & Data: Python (expert), SQL (expert), PySpark, R, Excel/VBA/Solver, Git, Docker

Cloud & MLOps: AWS (SageMaker, Bedrock, S3, Lambda), Azure ML, Databricks, REST APIs, Flask, FastAPI

Analytics: Plotly/Dash, Tableau, time-series analysis, statistical modeling, operations research, optimization, forecasting

Leadership: Team leadership and program scaling, C-suite advisory, change management, federal data governance, stakeholder engagement

EDUCATION

M.S., Operations Research — North Carolina State University, 2014; Ph.D. coursework completed (ABD)

B.S., Physics — Amirkabir University of Technology (Tehran Polytechnic)

RECOGNITION & CLEARANCE

Certificate of Appreciation — U.S. Census Bureau, 2022 Data Science Training Program (Chief Learning Officer and Program Lead)

U.S. Citizen. Secret clearance at DHS, 2016–2017, not currently active. Public Trust at FAA, VA and FPS. Cleared to the highest agency-level tier at NASA and the U.S. Census Bureau under those agencies' own designations.