

HARRIS MOHAMED

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EXPERIENCE

Kratos Defense and Security Solutions

Colorado Springs, CO

Artificial Intelligence Engineer

October 2025 – Present

- Developing unsupervised clustering pipeline to identify satellite behavioral patterns in terabytes of passive radio frequency datasets; experimenting with autoencoder-based feature extraction and density-based clustering (DBSCAN, BIRCH) to enable automated anomaly detection and reduce manual pattern analysis for Space Domain Awareness operations.
- Deployed secure LLM infrastructure for engineering teams by integrating OpenWebUI with AWS Bedrock and Claude Code, establishing data sovereignty controls and enabling AI-assisted development while maintaining compliance with network restrictions.

Space Domain Awareness Software Engineer II

October 2021 – October 2025

- Delivered unified data ingestion solution by developing Dagster-based pipeline and resolving critical failures across 20 edge nodes, enabling stable large-scale ingestion into a 65M+ row Data Lake optimized for high-performance querying.
- Developed analytics prototypes for bandwidth utilization, maneuver detection, and RF interference identification, collaborating with cross-functional domestic and international teams to support mission-critical Space Domain Awareness assessments.
- Regularly presented proof-of-concept analyses to senior stakeholders, translating findings into operational insights for the Kratos Global Sensor Network and driving alignment across engineering, operations, and customer teams.

EDUCATION

• **University of Illinois at Urbana-Champaign**

May 2025

Master of Science in Computer Science (Machine Learning, Cloud Computing)

GPA: 3.74/4.00

• **University of Illinois at Urbana-Champaign**

May 2021

Bachelor of Science in Computer Engineering

GPA: 3.36/4.00

Relevant Coursework: Applied Machine Learning, Deep Learning in Healthcare, Databases, Cloud Computing

SELECTED PROJECTS

Atlas – Agentic AI Workflow System [[GitHub](#)]

September 2025 - Ongoing

- Built agentic AI system using Claude 3.7 Haiku and n8n workflow orchestration to automate calendar management and task planning via Discord interface.

Automated hydroponics

April 2025 - Ongoing

- Developed a Raspberry Pi-based hydroponics automation system featuring a Postgres backend, Python Dash dashboard, and sensors for temperature, humidity, and soil moisture; ongoing work includes automating environmental controls based on real-time data. Successfully grew strawberries, lettuce, and green onion.

SELECTED PUBLICATIONS

• **H. Mohamed** [[paper](#)]

AMOS 2025

"Expanding Pattern-of-Life capabilities on Passive Radio Frequency datasets"

• **H. Mohamed** [[website](#)]

GSAW 2025

"Methods of Detecting Electromagnetic Interference in Passive Radio Frequency Data"

• **H. Mohamed** [[paper](#)]

AMOS 2023

"Monitoring Satellite Pattern-of-Life Changes with Passive Radio Frequency Data"

TECHNICAL SKILLS

Programming Languages: Python, C++, CUDA C++, C, Java, JavaScript, x86 Assembly, System Verilog

AI/ML/Data: PyTorch, TensorFlow, Scikit-learn, NumPy, SciPy, Pandas, Matplotlib, HuggingFace, PySpark, Dagster, LangChain, n8n, PostgreSQL, MySQL, MongoDB, Neo4j

Frameworks/Tools/Cloud: AWS Bedrock, Docker, OpenWebUI, Git, GitLab, JIRA, Confluence, Bamboo, Jupyter, LaTeX