MAJD KHALAF

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EDUCATION

Northeastern University Boston, MA
Ph.D. in Computer Engineering, Advisor: Prof. Mallesham Dasari *September 2025 – May 2030 (expected)*

- Research interests: Spatial intelligence; immersive AR/VR systems; wireless sensing and communications; wearable/mobile networked computing

Norwich University Northfield, VT
B.S. in Electrical & Computer Engineering, Minors: Mathematics and Computer Science *August 2021 – May 2025*

PUBLICATIONS & MANUSCRIPTS

Published

- J. Adkins, A. Bataineh, **M. Khalaf**. "Identifying Persons of Interest in Digital Forensics Using NLP-Based AI," *Future Internet*, 16(11):426, 2024. doi:10.3390/fi16110426
- T. C. Olukanni, **M. Khalaf**, M. Cross, D. M. Feinauer, A. Al Bataineh. "Future-Ready Students: Survey Analysis Utilizing Natural Language Processing," *FYEE 2024*, Boston, MA, 2024. doi:10.18260/1-2–48593
- A. Al Bataineh, V. Reyes, T. Olukanni, **M. Khalaf**, A. Vibho, R. Pedyuk. "Advanced Misinformation Detection: A Bi-LSTM Model Optimized by Genetic Algorithms," *Electronics*, 12(15):3250, 2023. doi:10.3390/electronics12153250

RESEARCH EXPERIENCE

Northeastern University, SINRG Lab Boston, MA
Graduate Research Assistant, Advisor: Prof. Mallesham Dasari *September 2025 – Present*

- Conduct research on low-power wearable sensing and wireless systems for spatial intelligence
- Built a capacitive sensing eye-tracking system for power-efficient gaze tracking on mobile XR (ACM SenSys 2026 submission)
- Measured multimodal network traffic (latency, throughput, power) across commercial XR/AI glasses over Bluetooth/BLE, Wi-Fi Direct, and 5G (ACM MobiCom 2026 submission)

Norwich University AI Center Northfield, VT
AI Research Fellow & Teaching Assistant *January 2024 – May 2025*

- Collaborated across digital forensics, medical, and ECE domains to design and implement AI solutions
- Built and processed large, complex datasets to support multiple AI research projects
- Delivered lectures, tutorials, and lab content for a senior-level AI course (20+ students)
- Mentored four French military college students on AI-based capstone projects

INDUSTRY EXPERIENCE

Atombeam Technologies Moraga, CA
Software Engineer II *February 2025 – September 2025*

- Developed and maintained cloud infrastructure using Infrastructure-as-Code
- Supported and optimized data pipelines for compression algorithms; designed/maintained ETL flows
- Contributed to observability/monitoring for distributed systems and improved CI/CD automation

Walmart Advanced Systems & Robotics Andover, MA
Site Reliability Engineer Intern *June 2024 – August 2024*

- Automated deployments on Linux VMs with Ansible, Docker, and Azure CLI
- Containerized and deployed Datadog Private Location agents for synthetic testing and visibility
- Optimized a Golang documentation viewer using goroutines and semaphores for scalability
- Automated artifact distribution with Ansible playbooks and Docker-based workflows

TECHNICAL SKILLS

Programming: Python, Golang, C/C++, Bash/Shell, MATLAB, R, Assembly, YAML, JSON, OOP, Node.js

ML/AI: PyTorch, TensorFlow, Keras, Transformers, GANs, NLP (NLTK, Hugging Face), classical ML, Pandas, NumPy, Jupyter

Wireless/Networking: Wi-Fi, Bluetooth/BLE, 5G, RF/Antenna systems, TCP/IP, Wireshark, QoS, wireless standards, OTA testing, near/far-field transforms

Hardware: Verilog/VHDL, Arduino, Raspberry Pi, ESP32, MSP430, Intel Quartus, LTSpice, oscilloscopes, signal generators, USB/SPI/I2C/UART/GPIO

Cloud/DevOps: AWS, Azure (AKS/CLI), Terraform, Docker, Kubernetes, Ansible, GitLab CI/CD, GitHub Actions, Helm, Artifactory, Maven, Datadog, SonarQube, VMware, Nutanix, REST APIs, Linux admin, SLA management, Git

Data: Postgres, MySQL

Soft Skills: Strong analytical, written, and verbal communication; problem solving

HONORS & MEMBERSHIPS

- Norwich University Student Engineer of the Year, February 2025
- Professor Carol E. Stephens Memorial Award (Mechanical Engineering), April 2024
- Norwich Engineers Society Freshman Award (highest academic potential), April 2022
- President, Eta Kappa Nu (Electrical Engineers Honor Society), April 2023 – May 2025
- Vice President, Tau Beta Pi (Engineering Honors Society), October 2023 – May 2025
- Teaching Assistant, Norwich Artificial Intelligence Club, October 2023 – April 2024