

AKRAM T. SAEED

Embedded AI / Systems Engineer · PhD Researcher

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SUMMARY

Computer Engineering PhD researcher building machine learning systems that run on resource-constrained wearable and medical devices, backed by 10+ years of engineering and technical leadership across embedded systems, signal processing, networks and university-scale infrastructure. Published in mobile computing, edge inference and assistive technology. Current research focuses on on-device monitoring for early detection of post-procedural clinical complications.

EDUCATION

Ph.D., Computer Engineering | The University of Texas at Dallas, Richardson, TX | 2026 – Present

- Research: AI for wearable and medical devices — on-device inference, multi-modal sensor fusion and clinical risk monitoring. Advisor: Dr. Kamran Kiasaleh.
- Relevant coursework: Embedded Systems (CE 6302) / Machine learning and Pattern recognition (CE 6364)

M.S., Electrical and Computer Engineering | University of Illinois at Chicago | 2015 – 2017

- Thesis: Location-Based Assistant for the Android Platform.

B.Sc., Electronics Engineering (Communications) | University of Mosul, Iraq | 2009 – 2013

TECHNICAL SKILLS

Edge ML & Deployment: TensorFlow Lite Micro / LiteRT, ONNX Runtime, ExecuTorch, CMSIS-NN, Edge Impulse

Model Optimization: INT8 quantization, quantization-aware training, pruning, knowledge distillation, model compression

Machine Learning: PyTorch, TensorFlow / Keras, scikit-learn, Hugging Face Transformers, NumPy, pandas, OpenCV

Embedded Hardware: ARM Cortex-M, STM32, ESP32, Nordic nRF52, Arduino, NVIDIA Jetson, Raspberry Pi, ATMEL, 8051

Firmware & Protocols: Embedded C/C++, FreeRTOS, Zephyr, bare-metal development, I2C, SPI, UART, BLE, MQTT

Signal & Sensor Processing: DSP, FFT, digital filtering, feature extraction, IMU / accelerometry, PPG, ECG

Languages & Tooling: Python, C, C++, C#, Java, SQL, Git, Docker, Linux, CUDA, AWS / GCP

RESEARCH & ENGINEERING PROJECTS

Wearable Assistive Device for Visually Impaired Users · *peer-reviewed*

- Designed and built a real-time embedded sensing system for obstacle detection, mobility guidance and proximity alerting, with all inference and signal processing performed on-device and no cloud dependency.
- Embedded C, ultrasonic and IR sensing, real-time DSP.

Edge-Cloud Split Inference for Mobile Object Recognition

- Evaluated on-device versus offloaded CNN inference for mobile object recognition across varying network conditions, characterising the latency, energy and accuracy trade-off on constrained hardware.
- Android, TensorFlow, ImageNet.

Smart Wheelchair · *supervised graduation project*

- Supervised design and build of an assistive mobility platform with embedded control and multi-sensor input.

Additional Projects

- Real-time speech feature extraction and reconstruction using Linear Predictive Coding (MATLAB/C) · 2D motion analysis in video streams · GSM-based smart home remote control (embedded IoT) · TCP/UDP client-server transmission scheme for Android devices.

PUBLICATIONS

- A Novel Multifunctional Assistive Device for Enhancing Mobility and Social Distancing Compliance among Visually Impaired Individuals.
- Cloud-Based ImageNet Object Recognition for Mobile Devices.
- Location-Based Assistant for the Android Platform.
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PROFESSIONAL EXPERIENCE

Head of Web Development Department | Ninevah University, Mosul, Iraq | *Aug 2023 – Aug 2026*

- Led architecture and delivery of the university's web platform and digital infrastructure serving 12,000 students and faculty across 24 academic departments.
- Managed a multidisciplinary team of 12 developers and IT specialists; defined system architecture, technical standards and engineering practice.
- Owned security, performance and reliability across all institutional web services.

Director of IT Services (Computer Center) | Ninevah University, Mosul, Iraq | *Nov 2020 – Aug 2022*

- Directed university-wide computing infrastructure — servers, networks and academic systems supporting 12,000 users across the campus.
- Prepared and managed the annual departmental IT budget and equipment procurement.
- Implemented information security controls protecting campus computing resources against intrusion.

Graduate Assistant | University of Illinois at Chicago | *Jan 2016 – Oct 2018*

- Built and maintained the data pipeline for 40,000+ student records across Slate CRM and SQL, covering deduplication, validation and automated reporting used daily by advising staff.
- Designed the department's CRM training programme, adopted as the standard onboarding model for all incoming advisors.
- Supported the department SQL database, WordPress platform and managed online programme systems.

Computer Specialist, Academic Computing & Communications Center | University of Illinois at Chicago | *Jul 2015 – Dec 2015*

- Supported students and faculty across Windows, macOS and Linux; tracked and resolved issues through the RT ticketing system.

IT Engineer | Al-Sumaria TV Channel, Iraq | *Aug 2014 – May 2015*

- Deployed and configured SNG satellite modems and antenna alignment for live broadcast uplink.
- Implemented Cisco routing, switching, VoIP and network security across the broadcast facility; managed server infrastructure, backups and disaster recovery.

Site Engineer | Huawei Technologies | *2013 – 2014*

- Managed BTS/BSS construction and commissioning; acted as lead on-site technical advisor to subcontractors and coordinated materials, quality control and site safety.

TEACHING & ACADEMIC LEADERSHIP

Graduate Teaching Assistant | The University of Texas at Dallas | *Fall 2026 – Present*

- TA for EE/CE 3202, Electrical and Computer Engineering Fundamentals II Laboratory.

Lecturer, Communications Engineering Department | Ninevah University | *Apr 2019 – Aug 2026*

- Taught C programming, computer networks, microprocessors and digital communications; supervised the digital signal processing laboratory and student graduation projects, including embedded and assistive-technology builds.

CERTIFICATIONS & LANGUAGES

Certifications: Cisco CCNA (Cisco Networking Academy) · Cisco Network Security · Android Software Development · Web Services Foundations (SOAP, REST)

Languages: Arabic (native) · English (fluent) · Kurdish (intermediate) · Turkish (basic)