

EJMEN AL-UBEJDIJ

Doha, Qatar ◊ (+974) 30783378 ◊ aymanubejdij@gmail.com
ejmen.vercel.app ◊ linkedin.com/in/ejmen-al-ubejdij

EDUCATION

Hamad Bin Khalifa University (HBKU)	<i>Graduated 2026</i>
B.Sc. in Computer Engineering	GPA: 3.85/4.0
President's List, 4 consecutive semesters.	
Texas A&M University at Qatar (TAMUQ)	<i>2022 - 2026</i>
Cross-registered; completed over half of Computer Engineering coursework at TAMUQ.	

TECHNICAL SKILLS

AI / Machine Learning

PyTorch, TensorFlow, scikit-learn, OpenCV, MediaPipe; computer vision, NLP, LLM evaluation, adversarial & domain-invariant training (GRL, MixStyle, FSQ), on-device/edge inference (Raspberry Pi), CARLA simulation

Programming Languages

Python, TypeScript/JavaScript, Java, C, Dart, SQL, LaTeX

Full-Stack & Cloud

Next.js, React, Node.js, Flask, Firebase, Tailwind CSS, Three.js, Sanity CMS, Vercel, Google Cloud

Tools & Hardware

Git/GitHub, Linux, Android Studio (Java/Kotlin), Flutter, Arduino, ESP32, QuPath, Figma; also Microsoft Office, Photoshop, Illustrator, PSpice, NI Multisim

Languages

English (IELTS 7.5), Arabic (native), Albanian (native)

SELECTED PROJECTS

CLEARS: Cooperative Emergency Alert & Response System (V2V, CARLA) *2025 - 2026*

Senior Design: cooperative blind-spot detection fusing camera and sensor data shared over vehicle-to-vehicle wireless links to warn drivers of hidden hazards; trained and validated in CARLA simulation. Advised by Dr. H. Alnweiri.

Mobile App for AI-Based Solar Panel Diagnostics (Machine Learning, Mobile, IoT) *2024 - 2025*

Mobile app sending data from solar panels to an AI model for real-time diagnostics, optimizing performance and maintenance.

Cancer Cell Analysis App for Medical Tablets (Python, QuPath, TensorFlow) *2024 - 2026*

App using a customized AI model with QuPath for cancer cell detection and classification on medical tablets to aid diagnostics.

Privacy-Preserving Emotion Detection on Raspberry Pi (PyTorch, Flask, OpenCV) *2024*

Emotion detection running locally on Raspberry Pi to preserve privacy, with Flask connecting to an AI server for enhanced inference.

Corporate Website for PPP Worldwide Consultancy (Next.js, Three.js, Firebase, Sanity) *2024*

Built and shipped the production site pppwwc.com: CMS, secure authentication, 3D graphics, scalable Vercel deployment.

HBKU Student Scheduler (Next.js, Firebase, TypeScript) *2024*

Web tool that resolves class conflicts caused by different scheduling systems between HBKU and TAMUQ, aiding students and professors.

Student AI Helper App (Java, Android, Firebase) *2024*

Android app with fingerprint-based attendance, Desmos math integration, and an AI speech-to-text grammar checker for Arabic and English.

Real-time ArSL interpreter with dual word- and character-level models, text-to-speech, and touchless head-gesture navigation; later extended into the signer-invariant recognition research (see Publications).

PUBLICATIONS

Evaluating Combinatorial Approaches to Nested Loop Counting and Their Generalizations

SIAM Undergraduate Research Online (SIURO), Vol. 19

Published, 2026

With E. Al-Amri, M. Humaid, H. Aldous, and Y. Abu Dayeh. Introduced the ghost element transformation for efficient counting under non-strict inequalities and gap constraints.

ROLLY: A Software-Controlled Multi-sensor Social Robot for Interventions Toward Children with Autism

Behavioural and Social Computing, Springer LNCS, pp. 283–291

Published, 2026

With A. Safa, F. Mohsen, A. Al-Zawqari, O. Al-Agha, and R. Ali. DOI: 10.1007/978-981-95-7144-4_26.

A Novel Monte-Carlo Compressed Sensing and Dictionary Learning Method for the Efficient Path Planning of Remote Sensing Robots

IEEE AICCSA 2025

Published, 2025

With A. Al-Hajri, A. Erbad, and A. Safa. Monte Carlo optimization of CS measurement matrices minimizing robot path length and reconstruction error.

Comprehensive Analysis of Automated Radiology Report Generation

UREP (Undergraduate Research Experience Program)

Under Review

Comparative study of state-of-the-art vision-language models (CT2Rep, LLaMA-XR, Argus, 3D-CT-GPT, CT-GRAPH) for report generation from 3D medical imaging.

Unified Arabic Sign Language Recognition via Phonological Movement Tokenization with Signer-Invariant Learning

First author, with S. B. Belhaouari and Y. Carreon Kahalan

In Preparation

Phonologically-motivated tokenization for ArSL using FSQ, GRL adversarial training, and MixStyle; state-of-the-art signer-independent accuracy on KArSL-190.

Chisel: Cognitive Human-Interpretability Suppression via Engineered Linguistics

First author, with S. B. Belhaouari and Y. Carreon Kahalan

In Preparation

Text privacy method grounded in cognitive science: character-level transforms render text unreadable to humans while LLMs retain full comprehension.

WORK EXPERIENCE

Student Research Assistant, Texas A&M University at Qatar

Sep 2024 - Jan 2025, Doha

Developed computer vision algorithms and trained ML models for image analysis and defect classification; processed and annotated large-scale image datasets for cross-institutional research.

Teaching Assistant, Data Science & Engineering Labs, HBKU

Jan 2025 - Jun 2025, Doha

Ran lab sessions for the graduate course DSEG682 (Special Topics in Data Science & Engineering) under Dr. Ali Safa, guiding students through hands-on ML experiments and grading with detailed feedback.

Software Engineer, QASR Startup

May 2024 - Sep 2024, Doha

Built visualization tools for Eclipse oil-reservoir simulation outputs and ported Python scientific libraries to Dart for a cross-platform product.

Healthcare IT Intern, Alfardan Medical with Northwestern Medicine

Jul 2025 - Aug 2025, Lusail

Analyzed hospital IT systems (Concept Medical Suite, Microsoft Dynamics 365 F&O), studied HL7/FHIR medical-device integration, participated in cloud integration and network security assessments, and completed HIPAA and Qatar data-protection training.

Student Enrichment Assistant, HBKU

Sep 2025 - Present, Doha

Support technical and programming courses for students alongside department operations.

IT Support Assistant, Carnegie Mellon University in Qatar

Jul 2024 - Aug 2024, Doha

Server installation, device setup and maintenance, and technical support for faculty and staff.

Program Admin Assistant, Computer Engineering, HBKU

Feb 2023 - Sep 2024, Doha

Scheduling, documentation, and organization of 15+ academic events for the CE program.
Contracts & Administrative Coordinator, HBKU *Sep 2022 - Jan 2024, Doha*
Built and maintained the university-wide contracts database supporting the Partnerships Office.

AWARDS AND CERTIFICATES

PCEP: Certified Entry-Level Python Programmer , Python Institute	2026
Tsinghua University EE Summer School , Dept. of Electronic Engineering	2025
President's List , HBKU	4 Consecutive Semesters (2022 - 2025)
Finalist, QatarDebate National Tournament	2024
Machine Learning & Hands-on Robotics , Texas A&M EEP	2024
Lifeline Hackathon , Carnegie Mellon University in Qatar	2024
Qatar Collegiate Programming Contest, 13th of 36 teams , Team HBKU	2023
8th Place Across All IT Majors in Qatar , National Ranking	2022
Tariqi Program Sponsorship , Alfardan Group	2022
1st Place, 13th National Robotics Competition , Qatar Scientific Club	2021

LEADERSHIP AND VOLUNTEERING

Organizer, AI in Engineering Debate , HBKU	2024
Computer Engineering Students Representative , HBKU	2024
Amir Cup Final, Local Organizing Committee	2020
Future Compass Program, Student Mentor	2018
Hospital Support Website , Hamad Medical Corporation	2016