
HASHEM ALTUJAR

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EDUCATION

Bachelor of Science: Electrical Engineering, 04/2025

King Fahd University of Petroleum And Minerals - Dhahran, Saudi Arabia

- GPA: 3.973
 - First-Honors Student
 - Sophomore
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EXPERIENCES

Research Fellow, 09/2025 - Current

KFUPM Research and Innovation – Dhahran, Saudi Arabia

- Developing a Robotic Hand for Real-Time Speech-to-Sign Language Translation.
- Designed and assembled CAD model, with 16 degrees of freedom.
- Utilizing Nvidia Jetson Orin Nano for real-time speech-to-text translation and gloss language conversion.
- Developing a ROS model to control robot motor functions to translate gloss to American sign language.

Design & Assembly Lead, 10/2025 - Current

KFUPM Robotics Team – Dhahran, Saudi Arabia

- Currently designing a 22' x 22' x 22' remote-controlled robot to compete in the annual Vex U Pushback 2025 Competition.
- Used AutoCAD to design the robot and assembled its intake, outtake, and scoring mechanism through a system of motors, flex wheels, and pneumatics.

Reserch Fellow, 06/2025 - 10/2025

KFUPM Research & Innovation – KFUPM, Telecommunications Research Lab

- Designed and 3D-printed a weather-resistant sensor enclosure (AutoCAD, Fusion 360).
- Developed hybrid drone-detection pipeline on NVIDIA Jetson Nano (Ubuntu) with real-time inference (15–20 FPS).
Trained ResNet-based acoustic classifier (TensorFlow, ~92% precision) and implemented Direction-of-Arrival localization via microphone array.

Research Fellow, 05/2025 - 10/2025

KFUPM Research and Innovation – KFUPM

- Primary author of a 2,700-word literature review on acoustic UAV detection pipelines and signal-processing workflows; analyzed 20+ studies (2018–2024) and synthesized findings across noise filtering, feature engineering, classification, and cost effectiveness. Published in *IEEE SCC 2025*.
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SKILLS

Programming Languages: Python

Backend: Git, Linux

Machine Learning: TensorFlow, NumPy, Scikit-Learn

Embedded Systems & Electronics: Robotics, Arduino, Microcontrollers, Jetson Nano

Design & Fabrication: 3D Design (AutoCAD), 3D Printing

AWARDS & HONORS

- **1st Place Winner - KFUPM Venture Tank;** Secured SAR 15,000 in funding for Elecure, our innovative smart electronic bandage that integrates electrotherapy and telehealth technology.
 - **Bechtel Corporation Scholarship Recipient** for academic and extracurricular excellence.
 - **Finalist @SCI, UK 2025 Bright SCIda Challenge;** youngest international team to qualify and **first-ever freshman** student to represent KFUPM **internationally**
 - **Dean's List** student; ranked 6th among my batch **@CEP, KFUPM**
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PUBLICATIONS

- “A Review of Acoustic Techniques for Drone Detection,” SCC 2025 Conference — Accepted for publication.