

# Hamzeh Abu Qamar

Al Ain, Abu Dhabi, UAE | US Citizen | [Portfolio](#)  
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## EDUCATION

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**United Arab Emirates University (UAEU), Al Ain, UAE** **2024**  
*B.Sc. in Electrical Engineering, GPA: 3.99/4.0*

**International School of Choeufat (SABIS), Al Ain, UAE** **2020**  
*High School Diploma, Average: 97%*

## ELECTRICAL ENGINEERING

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**Summer Intern, KAUST, Jeddah, KSA** **May 2023 – Sept. 2023**

- Tweaked ML model parameters on public datasets: WGAN, DCT, UNet
- Investigated innovative cuff-less methods to continuously monitor blood pressure

**Research Assistant, UAEU** **Oct. 2021 – May 2024**

- Awarded from IEEE Undergraduate Research Scholarship to pursue graduation project
- Analyzed link between ground stations and CubeSats for LEO constellations
- Created NetSat SpaceSim: link budget analysis calculator – uploaded to Github
- Conducted experiments around an artificial blood vessel to investigate the behavior of blood velocity & pressure in the presence of a clot (journal paper pending)
- Engineered a self-charging system for EVs using electromagnetic coils and solar panels

## ENTREPRENEURSHIP & LEADERSHIP

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**Youth 4 Sustainability, Masdar, Abu Dhabi, UAE** **Jan. 2024 – Present**

- Promoted sustainability & renewable energy solutions through seminars at COP28
- Discussed sustainability initiatives & incorporation into education with Boris Johnson (former PM, UK), HE Dr Sultan Al Jaber (CEO, ADNOC), HE Bora Muzhaqi (Youth Minister, Albania) at GSDC 2023, WEEC & WFES 2024

**Sheikh MBZ Scholarship, New York University, Abu Dhabi, UAE** **Sept. 2022 – Apr. 2023**

- Interviewed H.E. Dr. Sultan Al Jaber – ADNOC CEO & COP28 President
- Refined public speaking, critical thinking, leadership skills
- Traveled to Istanbul to learn about their culture and meet VCs & entrepreneurs
- Attended 2 networking events: Gitex Global & Sharjah Entrepreneurship Festival

**Founder & CEO, Velocity Academy** **Sept. 2020 – Feb. 2023**

- Operated Instagram online business with 3000 followers, tutored in math, physics, chem
- Facilitated 20 high school students' admissions into US undergraduate programs
- Collaborated with universities to conduct workshops on innovation & entrepreneurship
- Invited local entrepreneurs & experts to mentor UAEU's Hult Prize startups
- Arranged for students to participate in GSDC, MARSS, IEEE ICM, COP28, 6G Summit

## HACKATHONS & COMPETITIONS

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**Student Engineering Gathering, Sultan Qaboos University, Muscat, Oman** **Apr. 2024**

- Week-long poster presentation: displayed grad. project to 100+ students & faculty
- Engaged in immersive discussions regarding the future of CubeSats & satellite comm.

**Pioneers 4.0 Hackathon, Lipton Teas & Infusions, Abu Dhabi, UAE** **Mar. 2024**

- 3-day hackathon: understood logistics & challenges Lipton faces in terms of optimization
- Developed model to optimize real-world factory challenge: silos, lines, warehouse

**Hack4Climate, UAE Space Agency, Expo City Dubai, UAE** **Dec. 2023**

- 4-day hackathon: understood different levels & bands of sat. imagery
- Plotted NO<sub>2</sub> conc. & emissions for Dubai: Copernicus Sentinel-5P Level-2 imagery

**University Challenge, PwC, Dubai, UAE** **Dec. 2023**

- Underwent climate fresk challenge – arranging pictures according to specific theme
- Learnt about value & contribution of consulting in sustainability

**Innovation Camp, Lafarge, Dubai, UAE** **Dec. 2023**

- Developed solutions for construction and demolition waste (CDW) recycling: plant that produces metals, plastics, & raw material for sustainable future in construction

**AI in Finance Hackathon, Dept. of Finance, Dubai, UAE** **Nov. 2023**

- Developed platform that provides & collects data on microfinancing solutions for locals
- Envisioned AI algorithm for budget allocation – secured 1<sup>st</sup> place & 10,000 AED fund

**Youth Sustainability Hackathon, General Electric, Dubai, UAE** **May 2023**

- Collaborated with teammates on strategy: solve energy transition challenges in accordance with UAE's Zero Net Emissions by 2050 – secured 3<sup>rd</sup> place
- Devised energy mix plan – added 60GW renewable power to UAE's grid

**Athlete, GCC Universities Competition, Doha, Qatar** **Feb 2023**

- Represented UAE in 100m Sprint – secured 5<sup>th</sup> place
- 1<sup>st</sup> place in Abu Dhabi Football Competition 2022-24
- Acted as liaison between coaching staff and the 25 members of soccer team

## PUBLICATIONS

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1. K. Mohammed, **H. A. Qamar**, R. A. Khalil and N. Saeed, "*Regional CubeSat Communication and Constellation Design Evaluation*," 2023 International Conference on Microelectronics (ICM), Abu Dhabi, United Arab Emirates, 2023, pp. 284-287, doi: 10.1109/ICM60448.2023.10378915.
2. **H. A. Qamar**, K. Mohammed, S. Meetani, R. Alketbi, M. Umar and M. A. Ahmad, "Clot Monitoring Through Electromechanical Analysis," 2023 IEEE 11th International Conference on Systems and Control (ICSC), Sousse, Tunisia, 2023, pp. 953-958, doi: 10.1109/ICSC58660.2023.10449743.

3. **“SatNet SpaceSim: A Platform for Performance Analysis of Small Satellites Mega-Constellations”**

Presented – EuCNC & 6G Summit, June 4<sup>th</sup>, 2024

4. **“Probing Blood Dynamics: A Novel Piezoelectric Approach to Monitor Flow and Detect Clot Formation”**

Under Review (Major Revisions) – MDPI Sensors, Apr. 22<sup>nd</sup>, 2024

## **SKILLS**

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- Python, AI, ML Programming
- Raspberry Pi & Arduino
- MATLAB and C++
- Public speaking, critical thinking, leadership
- Project management

## **CERTIFICATES & LICENSES**

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- Cisco CCNA: Introduction to Networks
- Google Project Management: Professional Certificate