Hamzeh Abu Qamar

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EDUCATION

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

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

ELECTRICAL ENGINEERING

IEEE Research Scholarship   **Aug. 2023 – Present**
- Awarded from IEEE Antennas and Propagation Society to pursue graduation project
- Analyzed link between ground stations and CubeSats for LEO constellations
- Created NetSat SpaceSim: link budget analysis calculator – uploaded to Github

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 – Present**
- 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

Youth 4 Sustainability, Masdar, *Abu Dhabi, UAE*   **Jan. 2024 – Present**
- Young Future Energy Leader @ Khalifa University: discussions/seminars at COP28
- SDG Workshop @ WGS 2024: HE Bora Muzhaqi, Albania's Youth Minister
- UN Rapporteur @ WEEC 2024: investigated sustainability incorporation into education
- Delegate @ SES 2023: promoted sustainability & renewable energy solutions
- Delegate @ GSDC 2023: set up UAEU booth, displayed research, explored partnerships
- Panelist @ WFES 2024: discussed initiatives with Boris Johnson & HE Dr Sultan Al Jaber

Secretary of IEEE Chapter, UAEU   **Oct. 2022 – Present**
- Organized IEEE Day: invited professors to demo & showcase their research
- Arranged for students to participate in conferences: MARSS, IEEE ICM, COP28
- Invited local entrepreneurs & experts to mentor campus Hult's Prize startups
- Collaborated with exec. team & conducted workshops on innovation & entrepreneurship

Sheikh MBZ Scholarship, New York University, *Abu Dhabi, UAE*   **Sept. 2022 – Apr. 2023**
- Interviewed H.E. Dr. Sultan Al Jaber – Group CEO of ADNOC and President of COP28
- 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. 2021**
- Operated Instagram online business with 3000 followers, tutored in math, physics, chem
- Facilitated 20 high school students' admissions into US undergraduate programs

HACKATHONS & COMPETITIONS

Student Engineering Gathering, Sultan Qaboos University, *Muscat, Oman*   **Apr. 2024**
- Week-long poster presentation: displayed my 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_2 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 1st 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 3rd 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 5th place
- 1st place in Abu Dhabi Football Competition 2022-24
- Acted as liaison between coaching staff and the 25 members of soccer team

PUBLICATIONS

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. **"Probing Blood Dynamics: A Novel Piezoelectric Approach to Monitor Flow and Detect Clot Formation"**
   Under Review (Major Revisions) – MDPI Sensors, Apr. 22nd, 2024

4. **"SatNet SpaceSim: A Platform for Performance Analysis of Small Satellites Mega-Constellations"**
   Accepted – EuCNC & 6G Summit, Mar. 30th, 2024

SKILLS

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

CERTIFICATES & LICENSES

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