Ahmed Mohammed Abuzuhayr

Electrical Engineering Student
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SUMMARY

Electrical engineering student with experience in solar PV research, IoT prototypes, and student leadership. Combines engineering analysis, project coordination, and multidisciplinary teamwork to support energy, technology, and sustainability initiatives.

EDUCATION

University of Bisha | Aseer, Saudi Arabia
Bachelor of Science in Electrical Engineering | ABET Accreditation
GPA: 4.47/5 Second-Class Honors | Expected Graduation: Jun 2028

PROFESSIONAL EXPERIENCE

Electrical Engineering Summer Intern | Larsen & Toubro (L&T)

Bisha Solar PV Project – 3,000 MW (3 GW) | Bisha, Saudi Arabia | Jun 2026 – Aug 2026

- Worked with the project team to understand engineering workflows, site operations, and project coordination.
- Gained practical exposure to solar PV systems, electrical infrastructure, site safety, and quality requirements.

LEADERSHIP & VOLUNTEER EXPERIENCE

Head of the Student Executive Body | Student Advisory Council | Aug 2026 – Present

- Represent engineering students in discussions with the Dean on academic and development priorities.
- Oversee 11 student clubs and associations; identify students' needs and support research, innovation, and academic readiness programs.

Founder and CEO | Aseer Sustainable | Aug 2025 – Present
President | College of Engineering Club | Aug 2025 – Aug 2026
President | Society of Petroleum Engineers UB | Aug 2025 – Aug 2026

SKILLS

- **Soft:** Team leadership; problem-solving; stakeholder communication; teamwork; planning and coordination.
- **Office and Administrative:** Technical report writing; presentation preparation; documentation; training and event coordination.
- **Technical:** PVsyst; MATPOWER; PV system modeling; AC optimal power flow; data analysis and forecasting; NPV and LCOE analysis; Python; FastAPI; SQLite; ESP32; sensor and relay integration; MQTT; IoT dashboards; AI and multi-agent solution concepts.

CERTIFICATIONS

- The Summer School for Artificial Intelligence | King Khaled University | Aug 2026
- Design and Installation of Solar PV Systems | Udemy | Jan 2026
- Scientific Research | SEU – Micro Credential University Program | Dec 2025
- Renewable Energy and Green Building Entrepreneurship | Duke University | Feb 2025

AWARDS AND RECOGNITION

- Outstanding Student Recognition in Renewable Energy Engineering | College of Engineering | Jun 2024
- Third Place among Saudi Universities | NABD | Digitalthon
- Top 20 of 180 Teams | Qinwan | AgentX Hackathon, Qassim

LANGUAGES

- English | Fluent
- Arabic | Native
- Chinese | Currently learning

PROJECTS

Research Projects

1. **Grid-Constrained DC/AC Sizing of Utility-Scale PV with Rolling Conformal Calibration and AC-OPF Export Envelopes.**
   Conference Participation | International Conference on Renewable Energy Research and Applications (ICRERA 2026)
   *Author: **Ahmed M. Abuzuhayr***

— A techno-economic study of a 50 MWac solar plant, combining physical PV modeling, machine-learning forecasting, and grid analysis across 7 designs, 28 simulations, and 504 grid-feasibility checks. In the baseline simulation, dynamic export limits increased delivered energy by 5.197 GWh/year and annual margin by $212,000 compared with a static export limit.

Leadership and Community Projects

1. **Aseer Sustainable | Founder and CEO**
   *Participants: **Ahmed M. Abuzuhayr,** Dr. Khaled A. Alharthi, Dr. Mohammed S. Alqahtani, Riyad A. Alshahrani*

— A social and technology initiative connecting innovators through training and community programs, with representation at events, exhibitions, and competitions. Reached 70,000+ beneficiaries, provided training opportunities for 1,400+ participants, and coordinated 220+ volunteers.

— Selected among the top 52 of 400+ projects in a regional competition.

2. **College Inspires | Founder**
   *Participants: **Ahmed M. Abuzuhayr,** Dr. Khaled A. Alharthi*

— A strategic framework for student engagement at the College of Engineering, covering student governance, club coordination, research and innovation, and professional partnerships, with defined responsibilities, performance indicators, and phased implementation.

Competitions and Hackathons

1. **NABD | Smart Campus Energy Management | Digitalthon | Third Place among Saudi Universities | Leader**
   *Team: Dr. Mohammed S. Alqahtani, **Ahmed M. Abuzuhayr,** Raed Alqarni, Bayan Alshahrani, Khlod Alqahtani*

— IoT prototype linking room occupancy and environmental sensors to a dashboard, operating recommendations, remote load control, and fault alerts using ESP32, MQTT, FastAPI, and SQLite.

2. **Qinwan | AI-Powered Dates Marketplace | AgentX Hackathon, Qassim | Top 20 out of 180 teams | Member**
   *Team: Mzn Ghrsan, Khlod Alqahtani, **Ahmed M. Abuzuhayr**, Bayan Alshahrani, Sadem Aldossary*

— An AI-powered marketplace prototype for dates trading, featuring digital auctions, offer matching, automated negotiation, and price recommendations.

3. **AI, Renewable Energy, and Automated Irrigation for Sustainable Agriculture | World Engineering Day Hackathon 2024 | UNESCO | Co-author**
   *Participants: Ameen M. Albayhani, Mahil M. Alanazi, **Ahmed M. Abuzuhayr,** Shahad S. Alotaibi, Kholoud H. Al-fahm*

— A research model integrating AI, renewable energy, and automated irrigation to support food security and poverty reduction in Mombasa, Kenya.

PROFESSIONAL MEMBERSHIPS

— SPE | Student Member | Aug 2025 - Present
— IEEE | Student Member | Aug 2025 - Present
— SCE | Student Member | Aug 2025 – Present
— SPSA | Member | Dec 2025 – Present