ALI ELHAJ

Senior Undergraduate Mechanical Engineering Student
Dubai, UAE | elhaj.ali813@gmail.com | https://www.linkedin.com/in/ali-elhaj/

SUMMARY

Mechanical Engineering student with a strong foundation in mechanical systems, engineering design and analysis, and practical problem solving, complemented by hands-on experience building AI automation systems for real-world process workflows. Outgoing and collaborative, with leadership experience and strong communication skills, suited for analytical environments that value teamwork and creative thinking.

EDUCATION

American University in Dubai, Dubai, UAE Sep 2023 – May 2027

- *Bachelor of Science in Mechanical Engineering*
- *Relevant Coursework:* Engineering Mechanics (Statics & Dynamics), Thermodynamics, Fluid Dynamics, Heat Transfer, Mechatronics, Control Systems, Numerical Methods, Computational Fluid Dynamics, Design of HVAC Systems, Hydraulic Power Systems, Energy Systems
- *Awards & Memberships:* H.H. Sheikh Mohammed Bin Rashid Al Maktoum 100% Scholarship for Undergraduate Study, Dean's Honor List: Fall 2023, Spring 2024, Fall 2024, Spring 2025, Fall 2025, Spring 2026, Member of Alpha Lambda Delta Honor Society, Peer Advisor, Student Leaders Program
- *GPA:* 3.98/4.0

WORK EXPERIENCE

Khatib & Alami, *Sharjah, UAE* May 2026 – Aug 2026

Mechanical Engineering Intern

- Performed HVAC cooling load analysis in Hourly Analysis Program (HAP) for large residential towers, modeling all building spaces across up to 17 floors and applying ASHRAE 62.1/90.1 standards to generate flow rates and plant loads.
- Designed district-cooled chilled water systems for the Verdana Master Plan in Dubai Investment Park by Reportage Properties, calculating flow rates, sizing pipes and insulation, and building piping layouts in AutoCAD across five-plus sub-communities.
- Calculated ventilation, fresh air, and exhaust requirements per ASHRAE standards, including corridor smoke management (ACPH-based sizing), plus duct sizing and diffuser selection against manufacturer specs.
- Executed plumbing system design, including drainage fixture unit calculations and water supply/sewage flow rate sizing across multi-floor buildings (including Tecom Innovation Hub), then built a simple custom fixture-count automation tool with Claude, cutting calculation time by 3-4+ hours per building.
- Received a hands-on introduction to Autodesk Revit, modeling water pipe runs on a live MEP project file.
- Researched and applied the UAE Civil Defense Fire & Life Safety Code to select and specify fire-fighting systems by building classification across residential layouts.
- Processed temperature, pressure, flow, and load data across 15 Energy Transfer Stations for a district cooling project, and performed pressure loss calculations for the Bvlgari Lighthouse tower after an on-site inspection.
- Verified engineering calculations and drawings, and assisted in preparing technical reports and design-handover documentation for client submission.
- Built Datum, a multi-user web app consolidating five HVAC/fire-safety calculation tools (pump head, pressurization, parking ventilation, fresh air/FAHU capacity, fire and smoke) for the MEP team, coded with Claude, hosted on Netlify, with Supabase-backed accounts and data-saving, plus PDF/JSON export capabilities.

American University in Dubai, *Dubai, UAE* Sep 2024 – Apr 2025

Office of Recruitment and Admissions Student Assistant

- Maintained and updated 200+ prospective and current student records across university databases, ensuring the database is up-to-date with student documents and information.
- Represented the university at the Najah University Fair 2024 in Abu Dhabi, engaging with tens of prospective students and families and promoting academic programs.
- Served at the reception desk of the Office of Recruitment and Admissions, welcoming visitors and addressing inquiries related to admissions procedures and programs daily.
- Followed up with 100+ prospective student leads generated through online advertising campaigns, providing guidance and support throughout the application process.
- Conducted campus tours weekly for prospective students and visitors, delivering informative overviews of academic offerings, facilities, and student life.

SKILLS

- *Engineering Skills:* 3D Modeling (SolidWorks), 2D/3D MEP Design (AutoCAD, Autodesk Revit), HVAC Load Analysis (HAP), CFD Analysis (ANSYS Fluent), ASHRAE Standards (62.1, 90.1), MS Office (Excel, PowerPoint, Word), Numerical Modeling (MATLAB), Engineering Equation Solver (EES), Programming (Python).
- *AI Skills:* LLM tools (ChatGPT, Claude), AI-Assisted Web App Development (Claude Code, Supabase, Netlify), AI workflow automations (n8n AI agent design, multi-agent orchestration, Chatbot creation, API integration, vector database platforms e.g. Supabase, Pinecone).
- *Interpersonal Skills:* Problem-Solving, Leadership, Interpersonal Communication, Teamwork & Collaboration

EXTRACURRICULARS & LEADERSHIP EXPERIENCE

Peer Advisor, *American University in Dubai* Aug 2024 - Present

- Supported the planning and execution of multiple university orientation days by welcoming and assisting 500+ new students and parents, guiding campus tours, addressing inquiries, and ensuring the smooth flow of operations throughout the day.
- Delivered multiple presentations to 50+ students on university life, policies, and expectations, helping them feel informed, confident, and comfortable in their new environment.
- Served as a direct point of contact for 30+ first-year students, providing guidance on adapting to university life, understanding academic rules, and navigating common transition challenges.
- Assisted in organizing and running 10+ university events and activities throughout the academic year, contributing to effective coordination and a positive experience for both organizers and participants.
- Served as a panel member in an AUD virtual webinar, sharing firsthand university experience and responding to questions from prospective students.

LANGUAGES

- *English (Native)*
- *Arabic (Native)*
- *Spanish (Beginner)*

CERTIFICATIONS

Claude 101 March 2026
Anthropic

MATLAB Onramp Jan 2026
MathWorks

SOLIDWORKS 3D CAD Specialization Dec 2025
Dassault Systemes

Introduction to Artificial Intelligence (AI) Jul 2025
IBM