

MUHAMMAD ALI

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EDUCATION

University of Birmingham Dubai - BEng (Hons) Mechanical Engineering

Oct 2024 - Jul 2027 (Expected)

First Class/4.00 GPA

Modules: Mechanics, Thermodynamics, Engineering Mathematics, Mechatronics and Control Systems, Materials, Mechanical Design, Sustainability

GEMS Wellington Academy Silicon Oasis - High School Diploma

Sep 2017 - Jul 2024

A-levels: Math, Physics, Chemistry

GCSEs: Math, Further Math, Statistics, Physics, Chemistry, Computer Science, English, French, Business

WORK EXPERIENCE

Thermal Design Engineer - Dolphin Manufacturing LLC, Ajman

June 2026 - Aug 2026

- Mastered a 57-page product catalogue covering 100+ aluminium and copper-brass heat exchanger core configurations (radiators, charge air coolers, oil coolers), building the domain knowledge base for the AI automation programme
- Engineered core selection logic for an AI-powered RFQ system covering parameter extraction, thermal sizing, fin and material defaults and edge cases, projected to automate a 200+ RFQ annual pipeline and eliminate manual calculation, CAD iteration, simulation, BOM generation and reporting
- Evaluated 20 real-world RFQs of increasing complexity, including multi-circuit generator radiators and FPSO lube oil coolers, producing technical documentation used to train and validate AI models
- Acted as sole technical liaison between Dolphin R&D and SimScale developers, translating thermal and mechanical requirements into AI logic through feedback documents and change requests, and presenting weekly progress to a 20-person cross-functional group across Sales, R&D, IT and executive leadership

Team Principal / CEO - Formula Student AI Team

Aug 2025 - Present

UBFalcons Racing - University of Birmingham Dubai

- Founded and led a 40-member Formula Student AI team from inception, building the structure, culture and direction to turn a student group into a competition-ready organisation.
- Led project planning and delivery for an autonomous (driverless) vehicle programme, managing timelines and priorities across a large team under pressure.
- Owned budgeting and sponsorship, building commercial awareness, negotiation and stakeholder management.
- Aligned technical and business teams on autonomous-vehicle performance goals, branding and partnerships through cross-functional leadership and clear communication.

Laboratory Assistant - Kaizen Paints, KIPS Manufacturing (Dubai)

Jul 2023 - Aug 2023

- Tasked with supporting lab testing of automotive paints under strict quality standards; assisted in sample prep and test execution using lab instruments, improving accuracy and procedural discipline
 - Challenged to understand key industrial machinery used in paint production; conducted independent research and delivered a presentation to lab staff, strengthening technical knowledge and communication skills
 - Introduced to large-scale manufacturing processes through guided plant tours; gained practical insight into the workflow of automotive paint production from raw materials to final coating.
 - Tasked with assisting in paint formulation trials and lab testing; ensured data accuracy by carefully recording results, gaining strong attention to detail in quality control procedures
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PROJECTS

Final Year Individual Research - Machine Learning Prediction of Solar PV Performance and Faults **Sep 2026 - May 2027 (ongoing)**
University of Birmingham Dubai | Supervisor: Dr Adel Abdelwahab

- Developing a machine learning framework in Python (pandas, scikit-learn) that predicts solar PV power output and detects, classifies and quantifies faults, aimed at predictive maintenance of renewable energy assets.
- Running test campaigns on the university’s laboratory PV rig, varying irradiance and load and introducing graded faults (partial shading, simulated dust soiling, added series resistance) while recording full I-V characteristics.
- Feature engineering on each test (maximum power, short-circuit current, open-circuit voltage, fill factor, curve shape) to train and compare models, from regression and decision trees to more advanced methods.
- Validating models on unseen test cases against a physics-based PV model, and pursuing a collaboration with the Mohammed bin Rashid Al Maktoum Solar Park (DEWA) to test on field data.

Group Project - CFD Study of the LNER A3 Flying Scotsman and A4 **Oct 2026 - Present**
CFD & FEA (Level 3), University of Birmingham Dubai

- Modelling smoke behaviour and driver visibility on the LNER A3 Flying Scotsman and A4 using computational fluid dynamics (CFD) in ANSYS Fluent and CFX, within a three-person branch of a six-person team.
- Comparing the A3 and A4 configurations against our own design to assess how geometry affects smoke flow at the driver position, building structured simulation and analysis skills.
- Working alongside a second team focused on aerodynamic drag for the same locomotive, developing collaborative technical problem-solving.

Co-Founder and Developer - Krank.ai (AI Grading Platform) **May 2026 - Present**
Self-initiated startup, built for engineering students at the University of Birmingham

- Built a full-stack web platform in React and Vite with the Claude API (LLM) as the grading engine, grading lab reports and research papers against UK undergraduate engineering frameworks.
- Designed a configurable universal rubric with adjustable weights, custom criteria and editable classification scales, replacing module-specific rubrics to keep grading consistent.
- Implemented a grade predictor showing the point gain per improvement, follow-up Q&A with full report context and PDF export of feedback.
- Calibrated and validated model output against real graded reports from myself and classmates.

Project Lead - UAV Engine Design **Mar 2025 - May 2025**
University of Birmingham Dubai

- Led a multidisciplinary engineering project from concept to final submission, owning planning, accountability and the full design lifecycle.
- Owned CAD and technical documentation, translating concepts into clear, structured outputs.
- Applied analytical calculations to justify design choices, using engineering judgement and attention to detail.
- Produced a complete design package (report, drawings, assembly, manufacturing plan) to professional engineering standards and deadlines.

SKILLS & INTERESTS

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|----------------------------|-------------------------|--------------------|--------------------|------------------------------|
| • Autodesk Fusion 360 | • Python (scikit-learn) | • Claude API (LLM) | • English (Native) | • ASHI Certified First Aider |
| • Ansys Granta | • SQL | • CNC Mill | • Urdu (Native) | • RTA Driving License |
| • Edupack | • MATLAB | • Laser Cutter | • French (Limited) | • LAMDA Public Speaking |
| • ANSYS Fluent & CFX (CFD) | | | | |

I stay active through sports and fitness, which keeps me disciplined and composed. Technical extracurriculars keep me in the engineering loop and challenge me. I give back to the community and volunteer for good causes. I also enjoy teaching, learning broadly across fields, and I am an avid motorsports fan.

REFERENCE AVAILABLE ON REQUEST