

# MEHDI TOUHAMI CHAHDI

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## EDUCATION

**Duke University – Durham, NC** *Bachelor of Science in Mechanical Engineering | Minor in Computer Science | Certificate in Innovation & Entrepreneurship* • May 2028 | GPA: 4.0/4.0

**Relevant Coursework:** Computational Methods in Engineering, Data Structures & Algorithms, Thermodynamics, Machine Learning & AI, Finite Element Analysis, Advanced Dynamics, and Business Strategy in Engineering.

**Sevenoaks School – Kent, UK** GPA: 4.0/4.0 | August 2020 – May 2024 | **Honors:** House Captain, FIRST Robotics Team Captain, Headmaster's Prize for Academic Excellence in Physics, STEM Ambassador, Community Service Colors.

## PROFESSIONAL EXPERIENCE

**Accenture – Dubai, UAE** *Artificial Intelligence & Predictive Maintenance Consulting Intern* July 2023 – September 2023

- Conducted in-depth industry research on Argentina's power generation sector, identifying key inefficiencies and bottlenecks in Genelba Power Plant's maintenance operations.
- Analyzed operational data, identified Deep Neural Networks (DNNs) as the most suitable AI approach, and outlined data requirements for predictive maintenance models to help reduce equipment downtime and optimize operational efficiency.
- Presented key insights and findings to senior Accenture consultants and client stakeholders, demonstrating data-driven decision-making processes to support potential AI adoption strategies.

**Duke University Motorsports – Durham, NC** *Powertrain Engineer* September 2024 – Present

- Designed and optimized key components of the vehicle's powertrain system, including engine tuning, drivetrain development, and thermal management to enhance vehicle efficiency.
- Collaborated with multidisciplinary teams, ensuring compatibility between different subsystems to optimize overall vehicle performance and reliability.
- Conducted simulations on Autodesk Fusion 360 and testing to fine-tune powertrain performance, applying engineering principles to troubleshoot mechanical and software-based issues with the gas intake.

## LEADERSHIP & PROFESSIONAL DEVELOPMENT

**FIRST Robotics Competition (Team Zeta, Sevenoaks School) – Kent, UK** *Team Captain* September 2022 – May 2024

- Managed a 30+ student multinational team, overseeing financial, mechanical, programming, CAD, outreach, and media divisions, ensuring streamlined operations and synergy between departments.
- Designed and built a two-stage climber and box arm mechanism powered by Neo motors, leading the team to win the Rookie All-Star Award and qualify for the World Finals.
- Secured sponsorships and funding for the team, effectively managing the budget and resources to sustain growth and competition readiness.
- Organized STEM outreach programs, mentoring younger students and fostering interest in robotics and engineering.

**Tech Service at Sevenoaks – Kent, UK** *Co-Founder* September 2023 – May 2024

- Established a student-led initiative teaching STEM and entrepreneurship to 200+ students across 10+ schools in the Kent region, promoting technical literacy and innovation.
- Developed curriculum and lesson plans covering coding, CAD, robotics, and automation, ensuring students gained hands-on experience in engineering and technology.
- Led and organized workshops and hackathons, creating a dynamic and engaging learning environment for aspiring engineers and developers.

**Social Media Agency – Durham, NC** *Founder* December 2024 – Present

- Launched a digital marketing agency connecting small businesses with local influencers to drive cost-effective brand visibility and customer engagement as well as income for small creators.
- Programmed and designed an algorithm to calculate the value of influencer views using engagement data collected by APIs and an Instagram web scraper.
- Negotiated and managed partnerships with 5 local influencers, ensuring strategic content alignment and maximum audience reach.

**Duke European Business Society – Durham, NC** *Consultant* February 2025 – Present

- Completed an 8-week consulting and finance program focused on start-up advisory and the European business landscape, working on case studies to develop go-to-market strategies, financial viability assessments, and operational scaling plans.

## PROJECTS

**Duke Engineering Design Class – Solar-Powered Refrigerator for Low-Income Communities in Rural Uganda**

- Designed and built a solar-powered refrigeration system aimed at improving food security for low-income Ugandan households, leveraging renewable energy solutions.
- Conducted research on thermoelectric cooling, battery efficiency, and insulation techniques, leading to the development of a high-fidelity prototype with enhanced energy efficiency and cooling performance.
- Integrated a battery-powered fan and polyurethane insulation to maintain temperatures of 40°F for food preservation in off-grid environments.
- Performed cost analysis and feasibility studies, ensuring affordability and sustainability in real-world applications for rural Ugandan families.

## OTHER SKILLS & INTERESTS

**Technical Skills:** Python, Java, MATLAB, Fusion 360 / SolidWorks, AI & Machine Learning, Finite Element Analysis, CFD Simulations.

**Interests:** Sustainability & Clean Energy Solutions, AI & Predictive Maintenance in Engineering, Entrepreneurship, Soccer, Cooking.