Muhammed Hasan

mohammadhasan22003@gmail.com | +90 537 260 0391 | Siirt, Turkey | linkedin.com/in/muhammedhaan

Education

Siirt University – Bachelor of Engineering in Mechanical Engineering Sep 2021 – May 2025

Experience

Instructor Mentor, T3 Vakfı – Deneyap Technology Workshops – Siirt, Turkey Mar 2024 – Present

- Assist students in resolving Arduino, Fusion 360, coding, and design challenges through troubleshooting.
- Mentored 20+ students in applied robotics projects, enhancing technical skills through guided practice

Undergraduate Researcher, TÜBİTAK 2209A Research Program – Siirt University Mar 2024 – Mar 2025

- Developed supercapacitor electrodes from food-waste-derived carbon materials, achieving 7.98 F/g capacitance
- Conducted 27 comprehensive electrochemical characterization tests using CV, GCD, and EIS techniques
- Analyzed experimental datasets using OriginPro, generating visualizations supporting research conclusions

Intern, Clean Energy Lab – Siirt University, Siirt, Turkey Jun 2024 – Aug 2024

- Increased PV efficiency by 30.7% and power by 26% through optimizing 6-nozzle spray configurations.
- Decreased surface temperatures by 47% via spray-cooling tests on 80W photovoltaic systems.
- Contributed published research on solar thermal management by conducting spray cooling performance tests.

Conference Presentations

- **Hasan, M., and Bayrak, F.** Comparative Assessment of Photovoltaic Cell Temperature Models in HOMER Pro and Their Effect on Power Output Performance. 7th International Boğaziçi Scientific Research Congress. (pp. 145–155). Istanbul, Turkey, May 3–4, 2025.
- **Hasan, M., and Bayrak, F.** Impact of Different Ambient Temperatures and Discharge Rates on the Thermal Performance of Lithium-Ion Battery Pack. Sivas International Conference on Scientific and Innovation Research-IV, Sivas, Turkey, May 30–31, 2025.

Competitions & Extracurriculars

3T in Oncology Competition – Team Lead Jan 2025 – Jun 2025

- Developed AI MVP reaching semifinals by leading 5-member team to analyze lung cancer biomarkers.

Technological Applications in Psychology Competition – Team Lead Jan 2025 – Jun 2025

- Developed AI app MVP reaching semifinals by leading 10-member to analyze psychophysiological parameters.

Eksim Pulse Ideathon – Team Lead Jan 2025 – Feb 2025

- Led team to Ideathon finals by developing an AI-driven vertical farming system for sustainability.

Jet Motor Design Competition – Team Lead Dec 2024 – Apr 2025

- Designed jet combustion chamber by leading 9-member using additive manufacturing, thermal optimization.

Nuclear Energy Technologies Design Competition – Design Engineer Jul 2024 – Oct 2024

- Modeled 135 MWe TMSR coupled to supercritical CO Brayton cycle, attaining 45 % net thermal efficiency.
- Advanced to Teknofest national finals through superior nuclear reactor design and performance optimization

Arctic – Team Lead Nov 2023 – Sep 2024

- Decreased battery surface temperatures 31% using nanofluid-PCM-microchannel hybrid cooling integration.
- Reached Teknofest finals by mitigating thermal runaway risks in EV batteries through 3D-printed prototypes.

EcoEnergy – Team Lead Jun 2023 – Dec 2023

- Won 3rd place in YES Challenge competition by leading comprehensive renewable energy team
- Developed sustainable supercapacitor solutions from food waste through advanced material processing

Projects

Cognition X github.com/muhammedhasann/Cognition-X

- Improved dataset precision accuracy by developing BERT-based analysis system using PyTorch and SpaCy.
- Enhanced model performance efficiency by optimizing transformer algorithms for simulations and applications.

EcoRay.ai github.com/muhammedhasann/EcoRay

- Predicted power output accurately by developing QNN model using Pennylane for renewable systems.
- Compared model performance metrics by building SVR, GBM, ANN using MATLAB for analysis.

Professional Development & Certifications

Faradai Clean Technology Entrepreneurship Program, Faradai Mar 2025 – Jun 2025

- Completed a 12-week program focused on clean technology innovation and entrepreneurial methodology.

Nuclear Physics and Fusion Technology Program, TÜBİTAK Research Institute Sep 23-27, 2024

- Gained expertise in nuclear reaction theory, plasma physics, and AI applications in fusion technology.

Industry 4.0 - PLM Event Program, Ege University Sep 16-21, 2024

- Mastered concepts in digital manufacturing, mechatronic design, and green engineering principles.

Backend Development BootCamp, Re:Coded Mar 2023 – Sep 2023

- Acquired full-stack development skills with a focus on backend architecture, databases, and APIs.

Technical Skills

CAD & Simulation: Fusion 360, AutoCAD, SolidWorks, ANSYS (FEA, CFD, thermal analysis), Simulink
Programming & Analysis: Python, MATLAB, JavaScript, SQL, PyTorch, MS Office, Power BI, Git, OriginPro