MAEDEH GOURAKANI

Contact

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Education

M.Eng. Mechanical Engineering, major in Manufacturing, Amirkabir University of Technology, 2019 - 2022

B.Eng. Mechanical Engineering, University of Gonabad, 2013 – 2017

Research Interests

- Additive manufacturing
- Machine learning
- Intelligent automation

Research Experiences

Title: M.Eng. Thesis, Amirkabir University of Technology

Key Responsibilities:

- Operated and managed the 3D printing process using Fused Deposition Modeling (FDM) technology.
- Designed and conducted experiments to collect and process datasets using advanced image processing techniques.
- Monitored the printing process to detect incomplete project defects in real-time.

Achievements:

- Developed a system utilizing Convolutional neural network and K-means clustering to detect incomplete prints with an accuracy of 97.7%, ensuring continuous operation without interrupting the printing process.

Title: B.Eng. Final Project, University of Gonabad

Key Responsibilities:

- Conducted a comprehensive review of renewable energy sources, focusing on solar energy applications.
- Investigated various methods for harnessing solar energy and analyzed their benefits.

Achievements:

- Enhanced understanding of solar energy's role in sustainable development.
- Identified key advantages of solar energy, including cost-effectiveness and environmental benefits.

Course Projects

- **Municipal wastewater treatment**

  Municipal wastewater treatment the activated sludge process is designed for a city with a population of 110,00

- **Simulation of the flow around the car using Fluent software**

  The impact of first—and second-order discretization on the convergence of various car parts, as well as force values and drag coefficients were investigated.

Publications

- Gourakani, M., & Co-author, "Modeling of the crash box with origami pattern and optimization of parameters under compression test." Proceedings of the 28th Annual Conference of Mechanical Engineering, ISME2019.

Selected Courses

- Computer Programming
- Mechatronic
- CAD/CAM
- Welding

Languages

English: TOEFL band score **97**   **Persian:** Native

Skills

Mechanical Engineering Software

- SOLIDWORKS
- PrusaSlicer

Artificial Intelligence

- Machine Learning
- Image Processing

Programming Languages

- Python

Voluntarily

- **Calculus Teaching at Avaye Mandegar Charity**

  Taught basic to advanced calculus concepts to underprivileged students, developing lesson plans and assisting in student comprehension and problem-solving.