



Doctoral Vacancy Announcement form

Research Topic Title: Artificial Intelligence-Driven Mechanical Design and Additive Manufacturing (3D printing) of Advanced Functional Structures

No. of Openings: 1 PhD Position

Description:

The Mechanical Engineering Design and Additive Manufacturing (MEDAM) Lab at the Cyprus University of Technology (CUT) invites applications for a PhD position in the area of Artificial Intelligence-assisted Mechanical Engineering Design.

The research will focus on the integration of AI tools into mechanical design workflows, including but not limited to:

- Generative AI for mechanical component and system design
- AI-driven design of porous and biomimetic material structures
- CT-scan and imaging-based geometry reconstruction for 3D printing
- Neural Radiance Fields (NeRF), Gaussian Splatting and vision-based 3D reconstruction
- Topology optimization enhanced by machine learning
- AI-assisted design for additive manufacturing (DfAM)
- Hybrid digital workflows combining simulation, data-driven modelling and fabrication
- AI tools for cultural heritage mechanical replication and functional reconstruction

The candidate will develop novel computational methodologies and experimentally validate designs through additive manufacturing (FDM, SLA and hybrid AM systems) in the MEDAM Lab.

The project may contribute to ongoing EU-funded research activities related to digital heritage, advanced materials and AI-enhanced fabrication.

Required Qualifications:

- MSc in Mechanical Engineering, Materials Engineering, Mechatronics, Computational Engineering or related field
- Strong background in mechanical design and solid mechanics
- Experience in CAD (e.g., Fusion 360, SolidWorks, Blender)
- Programming skills (Python preferred)
- Familiarity with machine learning frameworks (PyTorch, TensorFlow or similar)
- Knowledge of additive manufacturing processes



Cyprus
University of
Technology

Studies and
Student Welfare
Services

- Experience with computational modelling, simulation or computer vision will be considered an advantage
- Excellent English communication skills

Highly motivated candidates with interdisciplinary interest in AI and engineering design are strongly encouraged to apply.

Funding: n/a

Research Advisor: Dr. Petros Siegkas

Position: Lecturer in Mechanical Engineering Design & Additive Manufacturing

Founder, MEDAM Lab – Mechanical Design and Additive Manufacturing Laboratory

Cyprus University of Technology

Email: petros.siegkas@cut.ac.cy