SMU
Lyle School of Engineering

Artificial Intelligence for Design Lab

The Artificial Intelligence for Design (AI4D) Lab seeks multiple highly motivated PhD applicants with an enthusiasm for research and interest in scientific machine learning, computational physics, design and optimization, fluid dynamics, and aerodynamics. In the AI4D Lab, we develop state-of-the-art mathematical solutions and novel data-driven (i.e., deep learning) algorithms with the target of applying multi-disciplinary design optimization (MDO) to solve large-scale design and optimization problems in complex systems, especially in fluid dynamics. The PhD positions are fully funded (the coverage is tuition, insurance, and stipend) with possible opportunities to collaborate with other industrial and academic partners. The starting date could be either Spring 2025 or Fall 2025.

Required qualifications:

- Have a Masters degree in mechanical, aerospace, applied mathematics, or a field related to fluid dynamics.
- Have hands-on experience in AI/ML, reduced-order modeling, and computational methods.
- Experience in programming with Python, Julia, or C++.
- Good knowledge of fluid mechanics, aerodynamics, and turbulence.
- Experience in CFD software development or good knowledge of algorithms used in CFD methods.
- Meet admission requirements for the PhD program in the Lyle School of Engineering [Link].

Interested applicants should email (set the subject of email as "PhD Application - SML") a brief cover letter and CV to:

Dr. Hamid R. Karbasian
Assistant Professor in AI-Powered Digital Engineering Systems
Department of Mechanical Engineering
Lyle School of Engineering
Southern Methodist University
Dallas, TX 7505, USA
Email: hkarbasian@smu.edu

About SMU and Dallas:

Southern Methodist University (SMU) is a prestigious private university located in Dallas, Texas. It is ranked among the top universities in the US (ranked 4th in Texas) and offers a comprehensive campus and a multidisciplinary engineering program that can enhance engineering skills in various fields. SMU has two brand-new HPC centers (ranked 3rd in Texas) for computational and AI/ML research projects. Since SMU is situated in one of the largest cities in the nation, it provides numerous opportunities for internships and job positions in engineering fields. Furthermore, Dallas is the 4th largest metropolitan area and the 9th most populated city in the US. It is one of the top-ranked cities for cultural diversity and economic opportunity.