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Job Title Mechanical Engineering DSAI Tenure-track or

Tenured Faculty

Department Mechanical Engineering

http://me.jhu.edu

Institution Johns Hopkins University

Baltimore, Maryland

Date Posted Nov. 19, 2025

Application Deadline Dec. 14, 2025
Position Start Date Jul. 1, 2026

Job Categories Assistant Professor

Associate Professor

Professor

Academic Field(s) Mechanical Engineering

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Job Description

The Department of Mechanical Engineering at Johns Hopkins University invites applications for tenure-track or tenured faculty positions to lead the transformation of mechanical engineering through data science (DS) and artificial intelligence (AI). We seek scholars who advance the field through foundational contributions to DS and AI, as well as apply these methods to address grand challenges in mechanical engineering. We welcome candidates whose research pushes the boundaries of what is possible when deep expertise in DS/AI intersects with core mechanical engineering domains, including fluid dynamics, mechanics and materials, dynamics and controls, robotics, biomechanics and bioengineering in human health, energy systems, space engineering, planetary health, and climate



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resilience.

Examples of DS/AI-centric research thrusts of interest to Mechanical Engineering include, but are not limited to:

- Al-accelerated modeling and simulation for multiphysics and multiscale problems
- Physics-informed and hybrid learning for reduced-order and surrogate models
- Uncertainty quantification, verification and validation, and risk-aware decision-making
- Learning-enabled estimation, planning, and control for autonomous and human-in-the-loop systems
- Digital twins and lifecycle analytics for complex engineered systems
- Data-centric engineering, including sensing, data assimilation, experimental design, and streaming analytics
- Generative and inverse design with autonomous design exploration
- Edge and embedded AI for real-time inference and control
- Foundations of trustworthy, robust, and interpretable AI for engineering decision-making
- Agentic and Agent-based approaches
- Computer vision
- Natural Language Processing
- DS/AI for resilience, sustainability, and planetary health

Johns Hopkins University has made a landmark investment in data science and artificial intelligence by establishing the Johns Hopkins Data Science and Al Institute (DSAI Institute). The Whiting School of Engineering at Johns Hopkins University is adding ~150 new faculty members over the next few years, constructing a new half-million-square-foot building to house the DSAI Institute, and deploying unparalleled computational infrastructure to support cutting-edge research and collaboration in this domain. This transformative initiative will establish Johns Hopkins University as one of the nation's largest and most distinguished engineering schools, featuring a world-leading AI research program. Faculty in the Department of Mechanical Engineering will play a vital role in this vision, with opportunities to engage across disciplines, access exceptional resources, and shape the future of data science and AI in engineering.

The <u>Department of Mechanical Engineering</u> at Johns Hopkins leads distinctive research programs. Its research spans core and emerging areas, including Mechanics and Materials, Robotics, Fluid Mechanics and Thermal Processes, Systems Modeling and Control, Mechanical Engineering in Biology and Medicine, Energy and the Environment, Micro/Nanoscale Science and Engineering, and



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Space Engineering. Its faculty thrives within a vibrant ecosystem of interdisciplinary collaboration that positions its faculty at the forefront of DS and AI innovation.

The department operates the Johns Hopkins Turbulence Databases (JHTDB), a multi-terabyte open numerical laboratory that provides programmatic access to DNS datasets for data assimilation, model discovery, and ML benchmarking. Additionally, its faculty members are key contributors to the Artificial Intelligence for Materials Design Laboratory (AIMD-L). This automated high-throughput experimental facility generates rich microstructure-property datasets for Al-driven materials discovery and inverse design in extreme environments. Faculty also engage across an exceptional network of university institutes and centers that amplify DS and AI research impact including: the Laboratory for Computational Sensing and Robotics (LCSR) for learning-enabled perception, planning, and control; the Institute for NanoBioTechnology (INBT) for bioengineering research and discovery, the Hopkins Extreme Materials Institute (HEMI) for data-driven materials discovery and design; the Institute for Assured Autonomy (IAA) for trustworthy and verifiable autonomous systems; the Center for Environmental & Applied Fluid Mechanics (CEAFM) for physics-informed modeling of multiscale flow phenomena; the Mathematical Institute for Data Science (MINDS) for foundational theory underlying modern DS and AI methods; the Ralph O'Connor Sustainable Energy Institute (ROSEI) addressing clean energy challenges; the Malone Center for Engineering in Healthcare for medical innovation; the Johns Hopkins Institute for Planetary Health (JHIPH) at the nexus of environmental interventions and human health; and Space@Hopkins connecting civilian space research across the university. Faculty also collaborate with the Johns Hopkins Applied Physics Laboratory (APL), one of the nation's premier research and development organizations, which tackles grand challenges in national security, space exploration, and critical infrastructure. This interconnected ecosystem enables transformative research spanning from foundational algorithmic advances to high-impact applications across autonomous systems, extreme environments, sustainable energy, healthcare, space, and defense.

Contact Information

Please reference Academickeys in your cover letter when applying for or inquiring about this job announcement.

Contact

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