PhD positions at Purdue in computational mechanics of materials, non-Newtonian fluids, and AI applications

Ph.D. graduate assistant positions with full financial support are available (starting from Spring 2024/Fall 2024) in the School of Construction Management Technology at Purdue University. The admitted students are expected to work with Dr. Chengcheng Tao.

Qualifications:
- Master's degree in Mechanical Engineering, Engineering Mechanics, Civil Engineering, or other closely related fields.
- Strong background in mathematics/mechanics, solid programming skills
- Students with publication records/research experience are preferred
- Strong oral and written communication skills and strong self-motivation
- Interests in one or more of the following areas:
  1) Computational mechanics of materials (computational fluid dynamics of non-Newtonian fluids, multi-phase flow, heat transfer, multiscale modeling, and finite element analysis)
  2) Sustainable and resilient infrastructure to natural hazards
  3) Artificial intelligence application in civil engineering (optimization/machine learning algorithms)

Application Instruction:
Please email Dr. Chengcheng Tao at tao133@purdue.edu the following documents:
- Cover letter (briefly describe your background and research interest)
- Curriculum Vitae (describe your education, research experience, significant skills, publication records if any, etc.)
- GRE and TOEFL/IELTS scores, copy of undergraduate and graduate transcripts
- Names and contact information of references

Applications are open until positions are filled.

Additional information:
Dr. Chengcheng Tao (https://polytechnic.purdue.edu/profile/tao133) is an assistant professor in the School of Construction Management Technology at Purdue University. She received her Ph.D. degree in Civil Engineering from the University of Florida. Prior to joining Purdue, Dr. Tao worked as an ORISE postdoctoral research fellow at U.S. DOE National Energy Technology Laboratory (NETL). Dr. Tao's research interests include rheological modeling for non-Newtonian fluids with computational fluid dynamics (CFD), computational mechanics of materials, sustainable construction materials and manufacturing, multi-objective optimization and machine learning application, and hazard-resilient Infrastructure. Dr. Tao led/co-led research projects funded by the National Science Foundation (NSF), U.S. Department of Transportation (USDOT), American Concrete Institute (ACI), Illinois-Indiana Sea Grant (IISG), Department of Energy (DOE) - National Energy Technology Laboratory (NETL), Purdue Polytechnic Holistic Safety and Security (HSS) research impact area, Purdue Institute for a Sustainable Future (ISF), and Purdue Discovery Undergraduate Interdisciplinary Research Internship (DUIRI) program.

Purdue University is a public land-grant research university in West Lafayette, Indiana, and the flagship campus of the Purdue University system. The university was founded in 1869. Purdue University is a member of the Association of American Universities and is classified among "R1: Doctoral Universities – Very high research activity". Purdue faculty, students, alumni and other affiliates have reached many notable and influential positions in business, media, politics, and science. In 2022, Purdue University is ranked No. 4 (tie) in Best Engineering Schools. Schools are ranked according to their performance across a set of widely accepted indicators of excellence.