

Postdoctoral Position in the Mechanics of Architected Granular Materials

The **Data-Driven Mechanics Laboratory** is seeking a postdoctoral researcher in the area of granular mechanics to explore the effect of particle shape, contact topology and disorder on the effective material behavior. The objective of the project is to eventually harness these attributes to design architected granular materials with improved and tunable behavior. A two-pronged approach will be used that combines an experimental campaign (granular material 3D printing, static/dynamic testing) and a computational investigation (discrete element simulation). Depending on the candidate's profile, more emphasis may be placed on either component. This interdisciplinary project bridges the gap between granular physics and materials science.

Main roles and responsibilities:

Research in this project involves a synergistic combination of numerical modeling, and experimental investigation with the following key aspects:

- Development of DEM models of static and dynamic granular material behavior.
- Planning and execution of material fabrication and experimental campaign.
- Dissemination in journals and international conferences.

Requirements:

- PhD degree in Civil/Mechanical Engineering, Applied Mechanics, Physics or related areas.
- Expertise in using and developing discrete element methods in low-level languages (C++).
- Expertise in experimental testing and digital image analysis.
- Ability to independently lead projects.
- Excellent English communication skills (oral and written).

We offer:

- World-class multi-cultural environment on the shores of beautiful Lake Lemman.
- Innovative interdisciplinary research at the Data-Driven Mechanics Lab.
- Opportunity to supervise and mentor MSc and PhD students.
- Competitive salary and employment conditions.

Application procedure:

Please email a **single PDF** consisting of:

- Curriculum vitae (max. 2 pages) that includes contact details of at least 2 referees,
- Research statement summarizing key past research contributions (max. 1 page)

to konstantinos.karapiperis@epfl.ch, indicating in the subject "Postdoc Application MA-GM" until July 1st 2024. Applications will be evaluated in the order that they are received. For inquiries please contact Prof. Kostas Karapiperis at the same email.

Expected Start Date: September 1st 2024

Duration: 2 years with possibility of extension (1-year fixed-term contract renewable annually according to EPFL rules)