We are looking for two highly motivated and ambitious Ph.D. students (f/m/d) in Physics-based Machine Learning

**Scientific environment**
The Multiscale Modeling of Fluid Materials group provides a unique interdisciplinary environment, integrating state-of-the-art machine learning, multiscale simulations, and statistical physics to understand and exploit soft matter systems. The group, led by Prof. Julija Zavadlav, is part of the School of Engineering and Design at one of Europe's top universities, the Technical University of Munich. For more information, visit www.epc.ed.tum.de/en/mfm.

**Project description**
The positions are offered in the context of an ERC Starting Grant project called ‘SupraModel: Peptide-based Supramolecular Co-assembly Design: Multiscale Machine Learning Modeling Approach.’ ERC Starting Grant is a highly competitive funding program by the European Research Council (ERC) to support groundbreaking research in Europe.

SupraModel proposes a novel computational framework that will enable a rational design of peptide-based materials used in emerging technologies ranging from drug delivery to soft semiconductor devices. The successful applicant will work with other project members to develop next-generation molecular models where deep neural networks predict molecular interactions. These models enable molecular simulations at an unprecedented accuracy, giving quantitative insight into physical processes at the nanoscale, and will be used to advance supramolecular peptide-based materials.

**Your profile**
The position is open to candidates holding (or who will hold) a M.Sc. degree in physics, chemistry, applied mathematics, or related fields. We are particularly interested in applicants with:
- experience with machine learning and basic knowledge of statistical mechanics/physics
- proficiency in Python programming
- fluent in spoken and written English (knowledge of German is not required)
- strong motivation and commitment to scientific excellence

**Our offer**
Join our young research group with a scientifically stimulating atmosphere and participate in cutting-edge physics-aware machine learning research! The position is available for three years, with an expected starting date of April 2023. Salary is based on the Free State of Bavaria public service wage agreement (100%, TV-L E13, starting at a higher level 2). Additional funding is available for scientific equipment and conference travel expenses.

**How to apply?**
Please send your application or questions regarding the position by e-mail to info.mmfm@mw.tum.de. The application should include (in one single PDF document): a cover letter stating your motivation and background for applying for this Ph.D. position, a CV, certificates, transcript of grades, and contact information of two references.

TUM is an equal opportunity employer. TUM aims to increase the proportion of women, therefore, we particularly encourage applications from women. Applicants with severe disabilities will be given priority consideration given comparable qualifications. Data Protection Information: As part of your application for a position at the Technical University of Munich (TUM), you submit personal data. Please note our privacy policy in accordance with Art. 13 General Data Protection Regulation (DSGVO) http://go.tum.de/554159 for the collection and processing of personal data in the context of your application. By submitting your application, you confirm that you have read the privacy notice of TUM.