Chair of Aerodynamics and Fluid Mechanics
TUM School of Engineering and Design
Technical University of Munich

TUM

Thesis / Interdisciplinary Project (IDP) / Research Practice / Study Project

Enabling Access to (large) Research Data via a Compute Cloud

for TUM-students within

Informatics, Aerospace, Mechanical Engineering, Data Science or similar

This research project aims to investigate the process of making large amounts of research data, obtained from CFD simulations on High Performance Computing systems, available to a restricted audience without Leibniz Supercomputing Centre (LRZ) credentials. The study will focus on developing new features for a compute cloud infrastructure to facilitate data access, storage, and sharing.

Research Objectives & Tasks
- Familiarization with sharing practices, cloud computing, and secure data access
- Collaboration with the LRZ to obtain the necessary understanding of Compute Cloud.
- Make data available through new features on the LRZ Compute Cloud.

https://www.lrz.de/bilder/banner-small/banner_cloud.png

Specific Topics (depending on your preferences)
- Integration into the DFN authentication and authorization infrastructure (DFN-AAI)
- Implementation and improvement of the web frontend
- Findability of Metadata through the frontend

Requirements
- Basic Linux-CL skills
- Willingness to learn a server setup
- Self-initiative and ability to work independently
- Experience in Computational Fluid Dynamics (CFD) is **not required**

Benefits
- Flexible working hours, remote work
- Recognition within your study program (thesis / internships / projects etc.)
- Insight into the implementation of a secure data storage and sharing solution
- Joint-mentoring by TUM and LRZ: exclusive experience with HPC-clusters

Links
- Attended Cloud Housing: https://doku.lrz.de/attended-cloud-housing-10745950.html
- NFDI4Ing research group: https://www.epc.ed.tum.de/en/aer/research-groups/nfdi4ing/

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