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

Enabling Access to Research Data via a Compute Cloud: A Case Study on Re-entry Flow Simulation Data (Apollo-like Space Capsule)

for students within Informatics, Aerospace, Mechanical Engineering, Data Science, Computer Engineering or similar

This research project aims to investigate the process of making large amounts of research data, obtained from a simulation of the re-entry flow of an Apollo-like space capsule, 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. The primary objective is to explore the implementation and configuration of a compute cloud to enable seamless data availability and collaboration.

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

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/

Contact
Benjamin Farnbacher
benjamin.farnbacher@tum.de
089.289.16094