UIP23-BOKU - High Performance Computational Infrastructure f. Collaborative Biomolecular & Bioinformatic Services

Zusammenfassung

In 2022, the University of Natural Resources and Life Sciences (BOKU) Vienna officially launched the BOKU Core Facilities, designed to support advanced technologies and methodologies for researchers at BOKU and external partners, including universities, research institutes, and industry. Staffed by scientists and technicians, these facilities focus on maintaining state-of-the-art equipment and infrastructure to enhance their appeal to potential collaborators and project opportunities. The Bioinformatics unit (BINF), is the latest addition to the department and it is specialized in the analyses of large-scale biological datasets. The Institute of Molecular Modeling and Simulation (MMS), is dedicated to modeling and simulation of molecular structures and interactions, being highly complementary with the BINF's expertise. Both BINF and MMS require high-performance computing, particularly for tasks like protein structure predictions, molecular dynamics, genome assemblies, and sequence alignment. To address these needs and leverage emerging tools, it is pivotal to acquire a GPU cluster, which will significantly improve their analysis efficiency and unlock the deploiment of more advanced artificial intelligence (AI) applications. The GPU cluster will impact their research in various ways: - Accelerating Protein Structure Predictions and Molecular Dynamics for drug discovery and biotechnology. - Streamlining Genome Assemblies and Sequence Alignment for genomic data analysis. - Enhancing AI and Deep Learning Algorithms for image analysis, biomarker identification, and genome variant predictions. This initiative aims to establish a high-performance GPU cluster, the Biomolecular Modeling and Bioinformatics (BMB) cluster, fostering research and collaboration in the BINF and MMS units. It represents a strategic development milestone that will boost BOKU competitiveness in AI research & will provide unprecedented research and service opportunities.

Principal Investigator:

Institution:

Status: Abgeschlossen (01.01.2024 – 31.12.2024)

Weiterführende Links zu den beteiligten Personen und zum Projekt finden Sie unter
https://www.wwtf.at/funding/programmes/uip/UIP23-BOKU/