

UIP24-MUW - Aufrüstung der Hochleistungsrechner-Infrastruktur des MedUni Wien Scientific Cluster

Abstract

Advances in biomedical research are increasingly dependent on large data sets and algorithms in the field of artificial intelligence and machine learning (AI-ML). Conversely, AI-ML algorithms form a common basis for various biomedical research areas. This proposal aims to improve the high-performance computing infrastructure at the Medical University of Vienna (hereafter 'the University') to enable collaboration between several research groups whose work relies heavily on large and powerful AI models. These groups fall under a strategic university initiative to unify and strengthen [AI/ML research](#). The need for this investment is driven by the increasing use of AI-ML models by our biomedical research groups and the rapid expansion of AI-ML-related research groups at the University. In addition to existing groups, we are adding two new tenure-track assistant professors, Hrvoje Bogunovic (in the final round of an ERC Consolidator Grant) working on [multimodal foundation models in ophthalmology](#) and David Fischer working on [machine learning for single cell biology](#), as well as an ERC Starting Grantee and Vienna Research Groups Leader (Adam Gosztolai) working on [brain-wide single neuron simulations](#). The need for this investment is driven by the increasing use of AI-ML models by our biomedical research groups and the rapid expansion of AI-ML-related research groups at the University. These latest additions to MedUni Vienna emphasise the urgent need to expand the computational infrastructure for their pioneering projects. The main goal of the UIP funding is to acquire new GPU-based computing hardware that will enable the development and application of cutting-edge AI-ML methodology in biomedicine. This includes large multimodal machine learning architectures, and the processing and sharing of big data and computational models to foster interdisciplinary partnerships within the university. As part of a wider effort to promote computational research, the groups involved have already secured partial funding, which will reach the necessary critical mass through the additional funding.

Principal Investigator:

Institution:

Status: Ongoing (01.01.2025 - 31.12.2025)

Further links to the persons involved and to the project can be found under <https://www.gmbh.wwtf.at/funding/programmes/uiip/UIP24-MUW/>