MUNI

MUNI Award in Science and Humanities

Declaration of Masaryk University economic unit of its readiness to hire the applicant and to create conditions for independent research

Host economic unit of MU: Faculty of Science, Department of Mathematics and Statistics

Applicant: Stanislav Sobolevsky

Declaration of the economic unit: Faculty of Science

— One of the main focuses of the Faculty of Science in research is to support emerging interdisciplinary teams aimed at achieving international excellence and developing close links to the world's best academic or commercial research partners. This long-term strategy is witnessed by the successful development of units like RECETOX or NCBR.

— In the last decade, the ambition of South Moravian Region includes the so-called Smart City strategy, which became an important part of the Regional Innovation Strategy, and this strand of activities also includes some of our teams (e.g., the Brno Living Lab concept within the Teaming project in RECETOX).

— So far, this endeavour has not been backed up by relevant capacity in the areas of Mathematics, Statistics, and Computer Science. The submitted project **Digital City** by Dr. Stanislav Sobolevsky, based on its three main pillars **Digital City Engine**, **Urban Network AI**, and **Digital City Consortium**, promises to bridge this gap in the most relevant and ambitious way. The project aims also involve the theoretic merit of developing a novel concept of the hierarchical spatio-temporal graph neural networks including their mathematical foundations, advancing the frontier of the two rapidly developing fields – Artificial Intelligence and Network Science.

— The principal investigator, Stanislav Sobolevsky, successfully created a transatlantic collaboration network based on top talented young researchers at Massachusetts Institute of Technology and New York University, a blend of public and private financing, as well as wide collaboration with research units in multinational corporations. His network bridges academic research in digital urban planning with commercial and societal goals, and its effectiveness is also proved by numerous top-level publications. Further extensions of the big data analysis involved in the project towards biological and economical areas are foreseen. Sobolevsky's ambitious plans include further essential extension of strong participation of highly talented graduate and undergraduate researchers from the area of the former USSR, which suggests building the core unit for his research in central Europe, and Brno seems perfect from this point of view. The Digital City Lab could also directly tie up our recent H2020 projects related to smart and healthy cities (ICARUS, SMURBS) and urban exposome (URBAN-X, EXPANSE).

— In view of the current general attractiveness of the proposed research agenda (including the potential for advanced ERC grants or proof of concept ERC grants), the proven experience and excellence of the principal investigator, the potential for further development projects, and the great extension of the Department of Mathematics and Statistics research portfolio, I see this MASH project as a great opportunity for the entire Masaryk University, across several disciplines.

— The Department of Mathematics and Statistics offers all relevant infrastructure for the Digital City Lab team and their visitors (office space, IT support, the secretariat, further support related to intellectual property issues in close collaboration with the MU Technology Transfer Centre, etc.) in long term horizon, whilst the computational capacity offered by CERIT also seems to be a perfect match for all needs related to the big data analysis and storage as described in the project documentation. There will be no direct investments involved in the project.

I hereby confirm that the applicant Stanislav Sobolevsky (if awarded the MUNI Award in Science and Humanities) will be employed at Faculty of Science, Department of Mathematics and Statistics.

The approval of the Dean of Faculty of Science, doc. Mgr. Tomáš Kašparovský, Ph.D.

Date: Signature: