

TFK-ohjelmasta 2021 tuetut hankkeet

TFK programme funded projects 2021

Project title: AI/ML for Beamforming in 6G	
Coordinator University of Oulu Nandana Rajatheva nandana.rajatheva@oulu.fi	<p>The surge in Internet usage, smartphones, social media and pervasive sensors are heralding an explosive growth in the amount of data being created, leading to enormous challenges for the storage, transmission, and processing of data. This growth in data and pervasive computing is attributed to technological advances in telecommunication technologies. We have witnessed a tremendous increase in the proliferation of telecommunications technology and devices in our daily lives with its importance never more important than in the COVID-19 pandemic situation. The roll-out and deployment of the next generation 5G telecommunication networks have start across the globe. As the initial discussions are on-going across the world on the next generation of wireless standard, 6G, we envisage many fundamental technological changes from previous generation of networks. In parallel, we have seen an increased use of Artificial Intelligence and Machine Learning in our daily lives with the use of analytics, predictions, and decision making. Coming together of AI/ML (machine learning) for 6G is a major technological development which is going to define our future in the coming decade, hence we have an urgent need of building highly skilled and trained manpower.</p> <p>Finland with one of the best education system's in the world and home to world leader in telecommunication and ICT such as Nokia and others, has been investing heavily in ICT education. Whereas India is demographically young with the 3rd largest enrollments in higher education in the World with a focus towards developing skilled manpower in ICT and high-tech areas. The teams from the best institutes and research centers from both the nations, with this project, would work together to train and create highly skilled workforce in the AI/ML and 6G. Through mobility, joint supervision and close cooperation, the teams</p>
Partners Indian Institute of Technology Indore (IIT Indore), Indian Institute of Technology (IIT-BHU) Varanasi, Indian Institute of Technology Goa (IIT Goa)	

would be successful in strengthening cultural ties between the two countries. Hands-on training and coding modules introduced in intensive workshops, internships, course curriculum, common study modules, and joint development of digital/virtual learning would help train hundreds of students and staff. The alignment of the project activities and outcomes with the National programs, and sharing experiences in offline/online teaching of each nation is the key driver for this project. The main objective of the project would be to establish an internationally renowned collaboration to train highly skilled Bachelor, Masters, and PhD students, and also staff and start-ups to address various aspects of AI/ML based hyper-connected world using 6G based systems. Joint supervision, visits to other institutes, industry and start-ups, and dissemination of the knowledge during mobility of staff and student will lead to maximum outreach and skill upgrading in both the nations.

A significant advantage at Oulu is the 6G Flagship project: <https://www.oulu.fi/6gflagship/>



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