

TFK programme, funded projects 2022

<p>Project title: Working life interaction in modelling and data-skills</p>	
<p>Coordinator</p> <p>Lappeenrantaan-Lahden teknillinen yliopisto LUT</p> <p>Matti Heiliö matti.heilio@lut.fi</p>	<p>East Africa is experiencing rapid changes characterized by growth in population and urbanization. Problems of Africa persist: civil infrastructure, food production, logistic chains, public health and sanitation, environmental hazards.</p> <p>African universities, and especially in natural science and mathematics suffer from weak interaction with external world, industry, business etc. Shortage in technological development, training of skilled workforce and science based professions are obstacles. Novel educational approaches and ICT based solutions are important factors for development. Data skills, mathematical knowledge and natural sciences are needed for development, innovation, renovation of society, even more true in the digital age. An urgent issue is job opportunities and employment of young people. Entrepreneurial abilities for graduates are needed.</p>
<p>Partners</p> <p>Tampere University, Nelson Mandela African Institute of Science and Technology, University of Jyväskylä, University of Dar es Salaam, University of Rwanda</p>	<p>In this project we implement a problem based educational approach to science education and university - working life interaction. A well-tested method for this are the so-called Study Groups with Industry for PhD students and Modelling Camps for Masters students, concepts which have evolved into a practice in many countries. Data-driven sciences involving applied mathematics of Modelling, Simulation and Optimization (MSO) contribute significantly to national and regional economies.</p> <p>The present project seeks to train applied mathematicians and to use Study Groups with local industries to bridge the gap between science and industrialists for mutual research benefits and as a sustainable strategy to develop graduate research. Partners from LUT, TAU and JYU have knowledge on running Study Groups and Modelling weeks. We have established contacts with key European networks (ECMI, EU-MATHS-IN). The African partners, Mathematics Departments at UDSM, NM-AIST, and UR will benefit from the expertise in successful implementation of Study groups for knowledge transfer academia-industry-society. The strategic objectives of African universities include: expanded access to university education, increased quality of graduates, enhanced volume and quality of research, strengthened outreach, networking and partnerships as well as institutional capacities.</p> <p>The project contains novel educational tools for MSc and PhD level, entrepreneurial training of graduates, capacity training for the departments in outreach for industry and societal stakeholders.</p>



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