

University of Oulu

Title: Overview of transport research at the University of Oulu

Presenter: Professor of Infrastructure & Transport, Pekka Leviäkangas, Head of Civil Engineering

Biography: Pekka Leviäkangas (born in 1962, PhD in technology in 2007, PhD in economics in 2019) has worked in management and expert positions in civil service, business and research. He is currently Full Professor of Infrastructure & Transport and Director of Civil Engineering at the University of Oulu. For 2015-2016 he acted as Associate Professor at Curtin University in the School of Built Environment, and Programme Director of the Australasian Centre for Building Information Modelling. For 2012-2016 he acted as Research Professor at University of Oulu in Industrial Engineering and Management. He held positions of Principal Scientist, Chief Research Scientist, Team Leader and Customer Manager at VTT Technical Research Centre of Finland Ltd. for 2000-2019. He also worked in Finnish Railways (VR-Group Ltd) and Finnish Roads Administration. He is a life-long nominated Adjunct Professor (Docent) in Industrial Engineering and Management at the University of Oulu.

His own research covers a wide spectrum of topics, from policy analysis to financial and investment analysis. His primary research has been in the transport sector, but his activities have extended to other fields such as healthcare, bioeconomy, climate change, meteorology, education, construction and infrastructure management. He has published widely: more than 70 peer-reviewed articles or monographs and more than 80 conference papers, plus many other literal contributions to books, reports and media. He has well more than 35 years of working experience in public and private sectors.

His works and activities have been awarded by National Academy of Sciences (Transportation Research Board), VTT, Finnish Road Administration, ITS Japan/ERTICO/ITS America, University of Indonesia and scholar funds. He has represented Finland in the OECD's International Transport Forum working groups and in European science & technology researcher networks (COST). He has also been a member of Transportation Research Board committees and sub-committees, Special Interests Groups of the World Congress on Transport Research Society, as well as expert groups of UNECE (United Nations Economic Commission for Europe). He has contributed to the work of International Union of Railways (UIC) and World Meteorological Organisation (WMO). He is the official Oulu University representative to ECTRI (European Conference of Transport Research Institutes).

Dr. Leviäkangas has advised companies, agencies and ministries, and during his research career he has been awarded several millions (€) of research funding. He has acted many times as a trusted expert for the Finnish Transport Safety and Communications Agency and Finnish Infrastructure Agency. He is currently recognised as a trusted expert of the Automotive Association of Finland.

Photo:



Title: Business models in sustainable transport services

Abstract: Valtteri has studied the value propositions and business models of 21 use cases demonstrating the use of AURORAL platform in rural areas. The use cases focus on one of five domains: Smart Farming, Smart Tourism, Smart Mobility, Smart Energy, and Smart Health. The presentation introduces the methodology of collecting the data and key findings made in the Smart Mobility domain

Presenter: Valtteri Ahonen

Biography: Valtteri Ahonen works as a Doctoral Researcher in the Civil Engineering Research Unit (CIV). His dissertation studies the effects of smart mobility on the sustainability of transport. Valtteri's background is in mechatronics in mechanical engineering which allows technically oriented research on smart mobility as well as broader research on different aspects in intelligent transport systems such as mobility behaviour. The dissertation is in relation with Horizon 2020 AURORAL project.

Photo:



Title: Measuring sustainability in transport

Abstract: This presentation explores the research conducted on measuring the sustainability of transport projects through the utilization of a Key Performance Indicators (KPIs) based framework. The speaker will illustrate how this framework serves as a valuable tool for evaluating and assessing transport projects by examining their incorporation of sustainability principles into their objectives. Attendees will gain insights into the broader implications of this research, particularly its applications within smart rural mobility, tourism, and sustainable transportation initiatives, with a particular focus on projects in Finland. Furthermore, the speaker's research work can be explored through the following published articles:

- [Sustainability of Smart Rural Mobility and Tourism: A Key Performance Indicators-Based Approach](#)
- [Are Smart Mobility Pilots in Finland Fostering Sustainability? – An Assessment](#)
- [Addressing Sustainability in Mobility: A Study on Finnish Smart Mobility Innovation Projects](#)

Presenter: MSc Shahid Hussain, PhD Candidate, Infrastructure and Transport Research Group, Civil Engineering Unit (CIV), University of Oulu, Finland

Biography: Shahid Hussain is currently a Doctoral Researcher at the Civil Engineering Research Unit (CIV) at the University of Oulu, Finland. He holds an M.Sc. in Transportation Engineering from Korea National University of Transportation (KNUT), South Korea, and a B.Sc. in Civil Engineering from the National University of Sciences and Technology, Islamabad, Pakistan. During his master's degree, Shahid worked as a researcher at the Smart Traffic research lab (STRL) at KNUT. His research interests include smart rural mobility, sustainable transport, and first-mile logistics. Shahid is actively involved in Finnish National and EU research projects, including AURORAL H2020.

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***Title:* Automated vehicles and work machines**

Abstact:

Presenter: Prof. Rauno Heikkilä

Biography: Dr. Rauno Heikkilä is a professor of digitalized construction and mining operations in the Faculty of Technology at University of Oulu, Finland. He is the head of the Structures and Construction Technology Research Unit. He received his Dr. Tech in 1996 from the University of Oulu. His major research interests cover structures and and construction technology, engineering mechanics, information modelling (BIM in construction) automation and robotics in the construction of roads, railways, fairways, bridges and buildings as well as in mining. <https://www.oulu.fi/en/researchers/rauno-heikkila>

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***Title:* Sustainable future logistics**

Abstact:

Presenter: Prof. Jouni Juntunen

Biography: <https://www.linkedin.com/in/jouni-juntunen-90b8993/>

Photo:

***Title:* 6G and the future of intelligent transport systems**

Abstact: The presentation introduces views of future wireless systems and transportation systems. Integration of telecommunication and transportation infrastructures assumes new stakeholders, actors, and operational models to develop future smart transportation services. The services will be based on intensive utilization of data.

Published articles:

- Evolution paths of stakeholder-oriented smart transportation systems based on 5G, 2021
- Towards an integrated process for digital transformation: 5G and beyond based smart transportation systems in cities and regions, 2022

Presenter: Mr. Risto Jurva, Research Manager, Head of Research / Doctoral Researcher

University of Oulu, Centre for Wireless Communications / 6G Flagship Programme

Biography: Risto Jurva received his M.Sc (Tech) degree from University of Oulu, Finland, in 1993. He has 30 years of experience with radio networks covering all the main technologies from 1G to 5G. He has worked globally for vendors, operators, integrators and in consultation and research. During his career he has gained wide experience from field engineering to management and business development.

Currently Mr. Jurva is working as Head of Research and Doctoral Researcher at Centre for Wireless Communications (CWC), University of Oulu, in Finland. He is focused on research of 6G technology, IoT systems, XR technologies and service concepts. His specific interest is 6G local networks such as micro-operator based wireless network solutions and business models for various verticals covering themes of smart cities.

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