

VIRTUAL WORKSHOP SERIES

TUM Asia

Development in Transportation & Logistic Systems

6 Nov - 27 Nov 2024



About TUM & TUM Asia



The Technical University of Munich (TUM) was founded in 1868 and is one of the most research-intensive and innovative universities in Europe. It is ranked #28 worldwide in QS World Ranking 2025, #26 in Times Higher Education (THE) World University Ranking 2025, and #13 in Global Employability University Rankings 2023-24 by THE . It has since produced 18 Nobel Prize winners.

To bring German academic excellence beyond borders, TUM Asia was established in 2002 and is most successful overseas campus of any German university. Apart from providing bachelor's and master's degrees conferred by TUM and jointly with renowned universities in Singapore, TUM Asia also offers executive education courses in areas like Industrie 4.0, Precision Engineering, and Railway and Logistics. To boost competencies in the manufacturing industry, the Competence Centre for Digitalisation, Technologies and Innovation (CDTI) was set up in collaboration with FESTO Singapore to provide lifelong learning courses. To date, more than 3,000 students from 45 countries have graduated from TUM Asia, establishing their footholds in various industries.

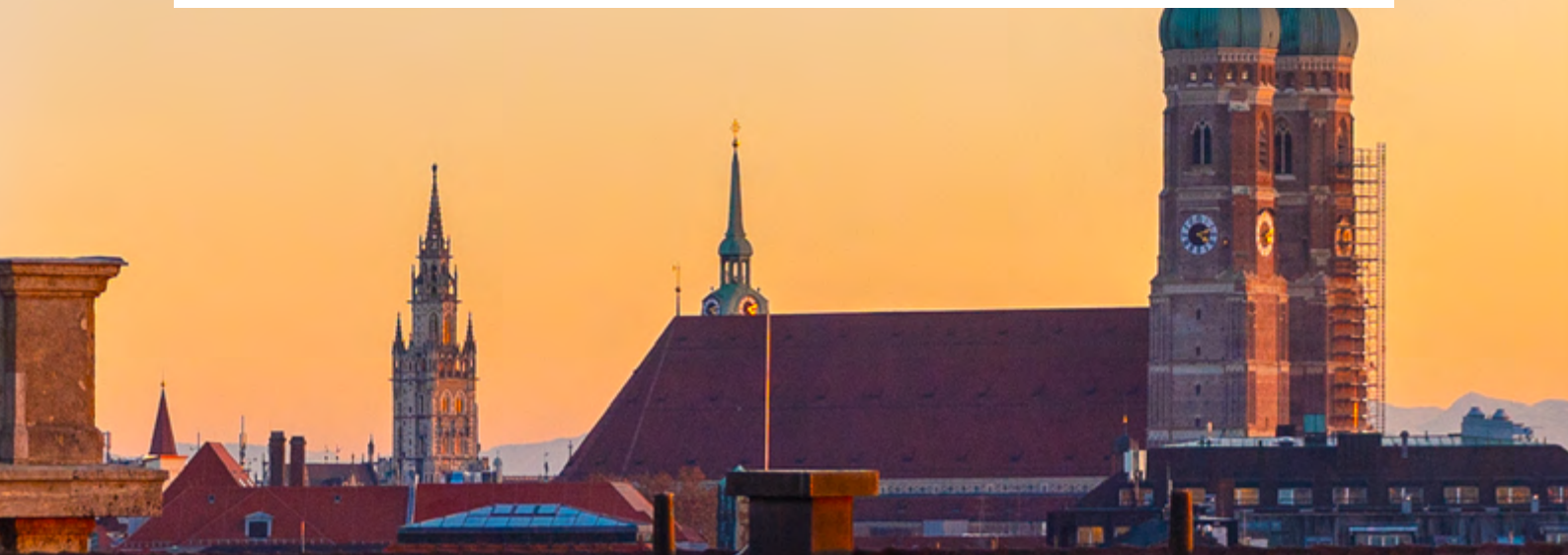
In 2010, TUMCREATE was founded as a multidisciplinary research platform to foster bilateral research exchanges between TUM and world's leading universities, local institutions, public agencies and industry partners to contribute towards the sustainable transformation of societies. It is funded by the National Research Foundation Singapore, making advances in research topics like urban mobility, food science and technology, biomedical technology and preventive healthcare, and energy.

To know more, visit <https://tum-asia.edu.sg>

About Development in Transportation & Logistic Systems

Fast track your knowledge and discover the latest mobility solutions in our transportation and logistic systems from a line-up of academic professors and industry experts.

Combining global insights and perspectives from a cadre of speakers from leading universities such as Southwest Jiaotong University, Gati Shakti Vishwavidyalaya, Petra Christian University as well as Technical University of Munich (TUM), these workshops will share some of the leading-edge development in transportation systems in India, Indonesia, China, Singapore and Germany.



Workshops Schedule

6 Nov 2024, Wednesday

19:00 SGT
(GMT+8)

Macroscopic Continuum Models and Fundamental Diagrams for Traffic Flow Modelling, Management and Operations - Past, Present and Future
by Dr. Hari Krishna Gaddam, Gati Shakti Vishwavidyalaya

13 Nov 2024, Wednesday

19:00 SGT
(GMT+8)

Railway Capacity – Concepts, Methods, and Current Developments
by Prof. Dr. Norman Weik, TUM

20 Nov 2024, Wednesday

19:00 SGT
(GMT+8)

Logistics Engineering
by Prof. Dr.-Ing. Johannes Fottner, TUM

25 Nov 2024, Monday

19:00 SGT
(GMT+8)

Shipping Route Optimisation
by Dr. I Gede Agus Widyadana, Petra Christian University

27 Nov 2024, Wednesday

19:00 SGT
(GMT+8)

Public Transport Timetabling
by Assc. Prof. Liu Tao, Southwest Jiaotong University

About the Workshops

To receive an e-certification from this event, participants are needed to meet a **minimum requirement of 75% attendance** to attain the e-certificate.

6 Nov 2024, Wednesday



**Dr. Hari Krishna
Gaddam**
Gati Shakti
Vishwavidyalaya

Macroscopic Continuum Models and Fundamental Diagrams for Traffic Flow Modelling, Management and Operations - Past, Present and Future

The macroscopic traffic continuum models (MCM) have a basis in fluid flow analogy and these models along with appropriate fundamental diagrams (FD) have a significant role to play in traffic flow modelling, management, and operation. This presentation will focus on introducing a historic perspective of various types of speed-flow-density fundamental diagrams, macroscopic continuum models and their applications in the field. Next, the presentation will bring in to light the ongoing research in this area and the developments from developing countries perspective as well. Models built on a strong empirical background and modified car following theories will be introduced. Further, the mathematical and numerical analysis of the models will be presented. Models' ability in replicating the traffic perturbation/traffic jams and further applications in evaluating alternative transport policy measures and helps in analysing the system performance will be highlighted. Future scope of research in the FD and MCM area will be discussed.

13 Nov 2024, Wednesday



**Prof. Dr.
Norman Weik**
TUM

Railway Capacity – Concepts, Methods, and Current Developments

Rail Capacity is an ambiguous, sometimes even controversial concept in railway system performance analysis. It refers to the traffic load that can or should be operated – often measured in terms of secondary considerations such as operating costs or quality thresholds derived from customer preferences and mode choice.

In this talk, we review the basic concepts, methods, and influence factors in railway capacity assessment, explaining the interdependence between infrastructure, train operating program, and traffic stability. A particular focus will be on recent developments in the representation of timetable and network correlations in capacity planning.

20 Nov 2024, Wednesday



Logistics Engineering

Logistics Engineering – Why logistics is an enabler for efficiency and sustainability

**Prof. Dr.-Ing.
Johannes Fottner**
TUM

25 Nov 2024, Monday



Shipping Route Optimisation

Enhancing Indonesia's Maritime Logistic Efficiency

**Dr. I Gede Agus
Widyadana**
Petra Christian
University

27 Nov 2024, Wednesday



Public Transport Timetabling

Public Transport Timetabling and Vehicle Scheduling: Basic Methods and Recent Development

Assc. Prof. Liu Tao
Southwest
Jiaotong University



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