



Smart freight TranspOrt and logistics research Methodologies

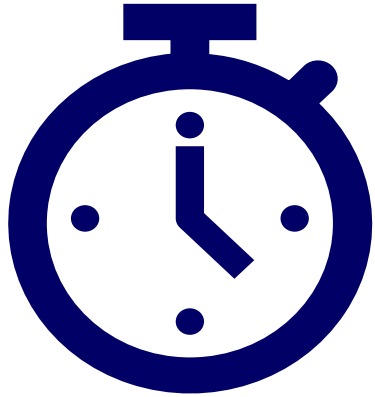
# Big data analytics in Freight

Wasim Shoman, Sonia Yeh, Frances Sprei,  
Chalmers University of Technology

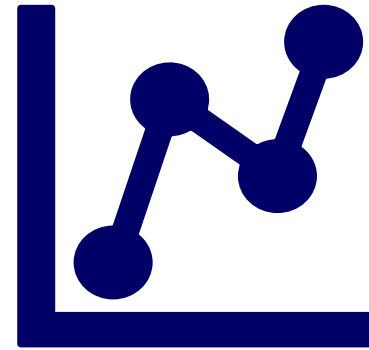


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# Big data analytics in Freight



**Five Vs: volume,  
velocity, variety,  
veracity and value**



**Utilizing techniques for predictions,  
identifying recent trends, finding  
hidden information, and making  
decisions.**

# Applications areas of Big Data

## **Descriptive and Diagnostic (what and why)**

- Sharing real-time traffic information
- Driving behavior and vehicle type recognition
- Analysis of near misses and collisions
- OD matrix extraction
- Trip chain generation.

## **Predictive (what will happen)**

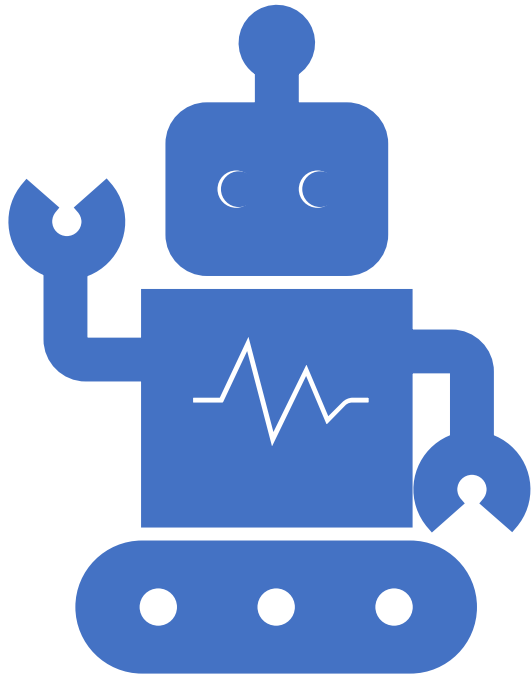
- Urban planning
- Demand forecast
- Traffic control
- Management and optimization
- Charging infrastructure allocation
- Power consumption
- Supply chain

## **Prescriptive (what should be happening and how to influence it)**

- Connected vehicles/autonomous vehicles
- Increasing safety on the road
- Sustainability analysis
- Climate change analysis



# Tools for modelling and extraction of knowledge



- Machine learning and artificial intelligence
  - Supervised learning
  - Unsupervised learning
  - Deep learning
  - Times series
- Optimization
- Agent Base Modelling.



# Challenges

## Organizational

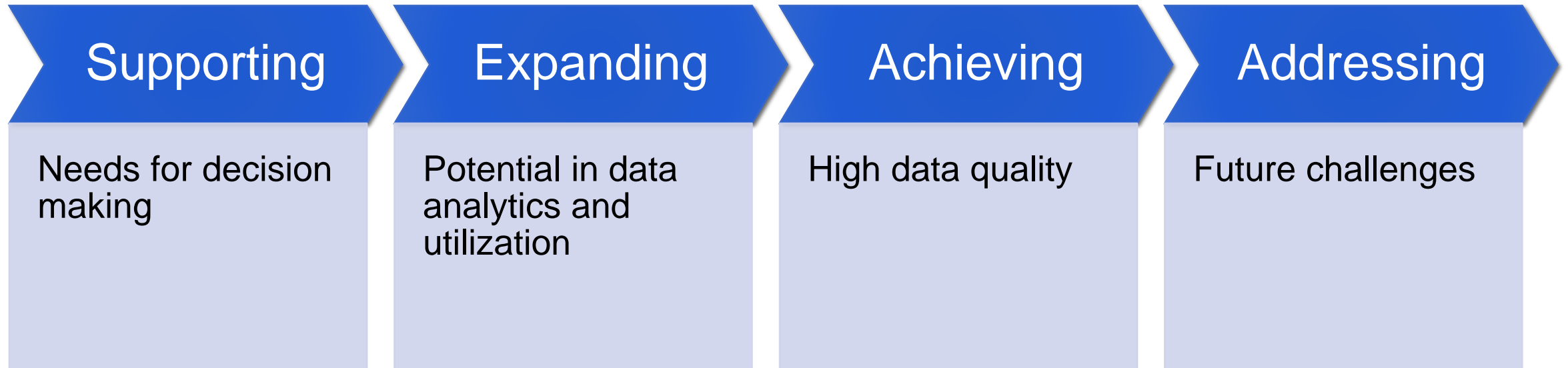
## Technical

- Preventable gaps
  - Data collection
  - Storage
  - Dimensionality
  - Heterogeneity
  - Privacy
  - Validation
- External gaps
  - Data ownership
  - Data quality
  - Representativeness

## Legal

## Political

## Future Opportunities



# Interested to learn more?

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## D3.1 Status report on the review of new data sources and methods, and a tailored mode PDMP

Dissemination level

Public

[Yancho Todorov](#)

VTT Technical Research Centre of Finland

Tietotie 4C, Espoo

[yancho.todorov@vtt.fi](mailto:yancho.todorov@vtt.fi)

+358 40 164 98 27



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