

**AERODYNAMIC ANALYSIS OF HIGH-SPEED TRAINS PASSING  
FREIGHT TRAINS IN TUNNELS USING A SIMPLIFIED 2D CFD  
MODEL WITH REALISTIC TRAIN GEOMETRIES**

**THESIS**

This thesis is submitted in partial fulfillment of the requirements for the Master of Science (M.Sc.) degree in the Master's Programme in Transport System and Engineering



**Written by**

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**MASTER PROGRAMME  
TRANSPORT SYSTEM AND ENGINEERING STUDY PROGRAMME  
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## APPROVAL SHEET

The Supervisor Team approves the thesis

### **AERODYNAMIC ANALYSIS OF HIGH-SPEED TRAINS PASSING FREIGHT TRAINS IN TUNNELS USING A SIMPLIFIED 2D CFD MODEL WITH REALISTIC TRAIN GEOMETRIES**

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### THESIS

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