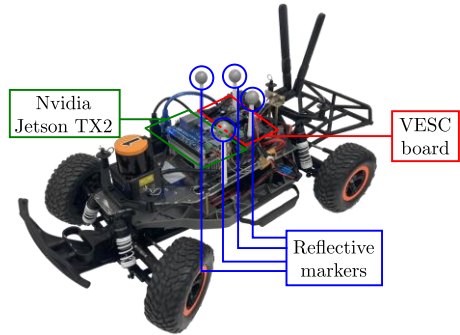


Deep-Learning-Based Model Augmentation of Vehicle Dynamics

B.M. Györök, J.H. Hoekstra, T. Péni, M. Schoukens, R. Tóth

Autonomous vehicle

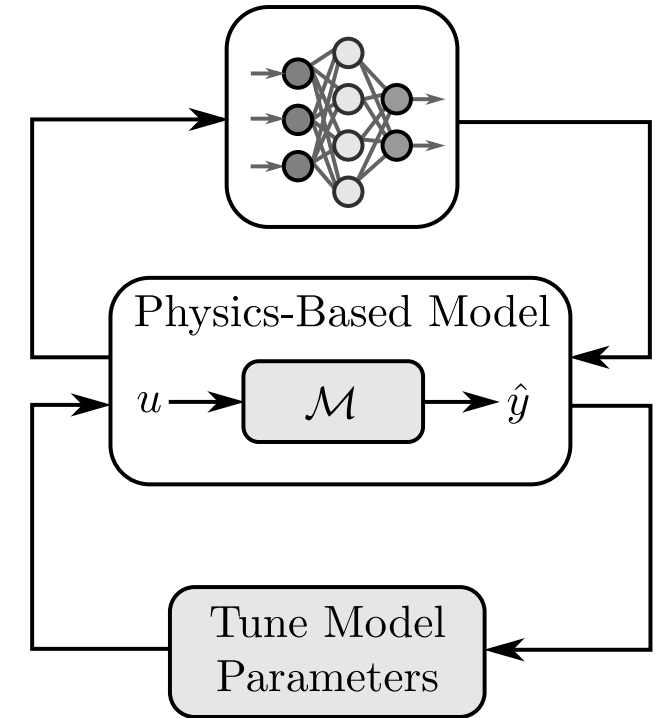


Data Acquisition

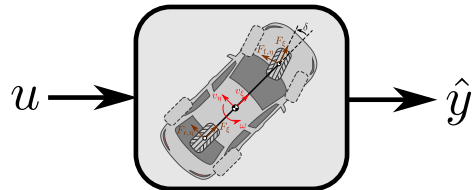


Final structure

Machine Learning (ML)



Physics-Based (PB) model



Main ingredients

- Flexible LFR-based structure (co-learning of PB model parameters + ML component)
- Dynamic augmentation (ML part with states)
- Physics-guided regularization
- SUBNET-based identification pipeline