Chair of Computational Modeling and Simulation
TUM School of Engineering and Design
Technical University of Munich

Learning by printing: Prediction of AM-process outcomes

Project Characteristics

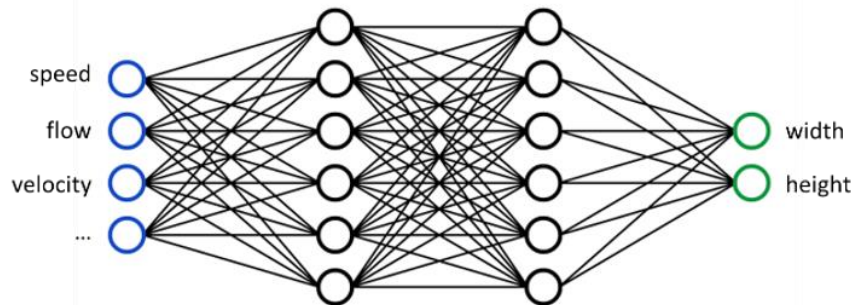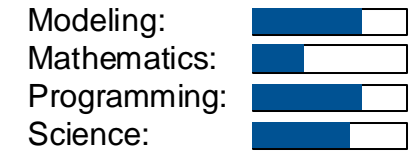|		
Modeling:		
Mathematics:		
Programming:		
Science:		

Task

Predict the outcome of an extrusion-based AM process using a data-driven model trained on process parameters and print performance. To this end, a suitable data set is to be generated using a small-scale clay extrusion printing setup.
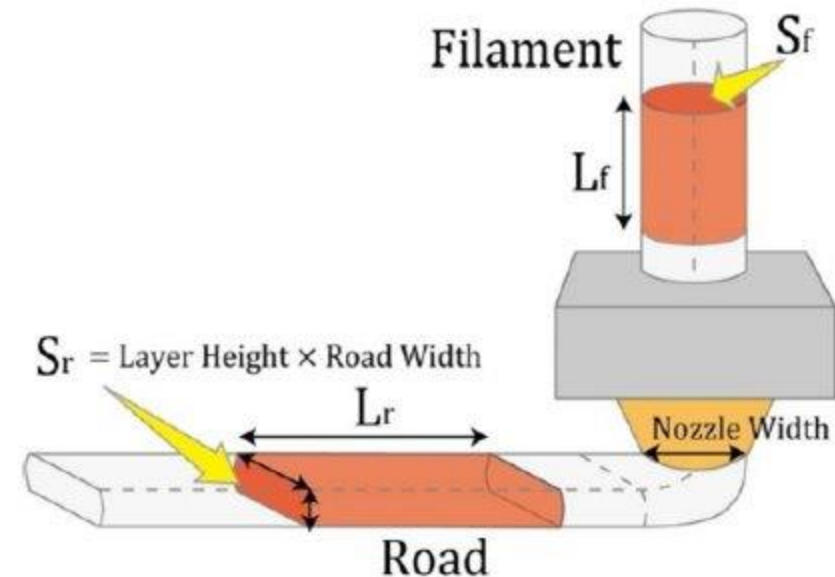
GENERAL INSTRUCTIONS:
☐ Design suitable experiments for the small-scale printing setup
☐ Generation of a data set by systematic parameter variation
☐ Evaluation of the print performance
☐ Development of a data-driven model capable of predicting performance

Example architecture: Mulit Layer Perceptron (MLP)

Takahashi, H and Miyashita, H: Expressive Fused Deposition Modeling by controlling extruder height and extrusion amount