

# AI-Based Defect Detection in Extrusion-Based Additive Manufacturing

**Task**  
This project focuses on developing and benchmarking machine-learning models for defect detection using heterogeneous data from extrusion-based additive manufacturing.

- Design a data preparation strategy that transforms process information into ML-ready inputs.
- Develop and evaluate different machine-learning pipelines for time-series defect detection.
- Benchmark models and identify the most effective ML setup.
- Deploy the selected model for live defect detection and FIM event updates (stretch goal).

## Project Characteristics

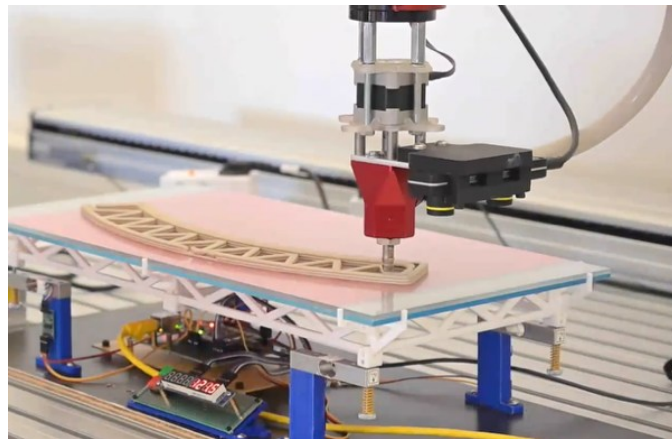
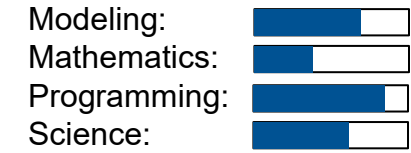


Figure 1: Clay 3D Printing on Loadcell Printing Platform

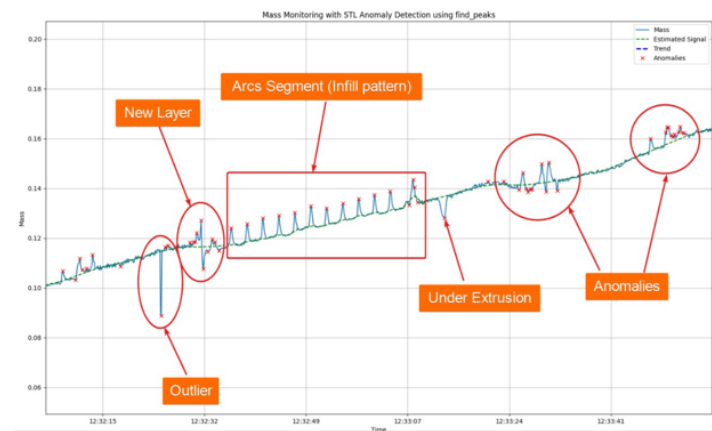


Figure 2: Manual Loadcell Time-Series Data Analysis