

Technische Universität Berlin

Institute for Machine Tools and Factory Management - Chair of Quality Science
Prof. Dr.-Ing. Roland Jochem

Estimation of FDM-failure rates from open community data Bachelor-/Masterthesis (English or German)

MOTIVATION

Many kinds of failures can occur during a fused deposition modeling (FDM) process [1]. Even though high-level statistics about usage and desires of FDM-practitioners are regularly published (e.g. [2]), to the best of our knowledge, statistics about relative frequencies of specific process failures do not exist.

REQUIREMENTS

- Knowledge in programming, preferably Python or R
- Experience or willingness to learn and apply natural language processing (NLP)
- We look for a systematic and open-minded thesis student
- The thesis can be written in English or German

YOUR TASKS

- Identification of potential data sources
- Definition of a common data format
- Data scraping from identified communities
- Transformation of source data to a uniform representation
- EDA and data labeling
- Training of an algorithm to categorize unseen data by NLP-techniques

REFERENCES

[1]	Hsiang Loh, G., Pei, E., Gonzalez-Gutierrez, J., & Monzón, M. (2020). An overview of material extrusion troubleshooting. <i>Applied Sciences</i> , 10(14), 4776.
[2]	Bourell, D., & Wohlers, T. (2020). Introduction to additive manufacturing. <i>Additive Manufacturing</i> , 24.

CONTACT

Please send your complete application (curriculum vitae, proof of performance) by e-mail to Turgut Caglar or Timo Hinrichs

T 030/314 21055

E turgut.r.caglar@campus.tu-berlin.de / timo.hinrichs@tu-berlin.de