Karlsruher Institut für Technologie

Institut für Produktentwicklung
am Karlsruher Institut für Technologie

Bachelor-/ Masterarbeit

Aushang ab: 12.04.2024
Aushang bis:

Status: offen
Forschungsgruppe: Konstruktionsmethodik

Kontakt

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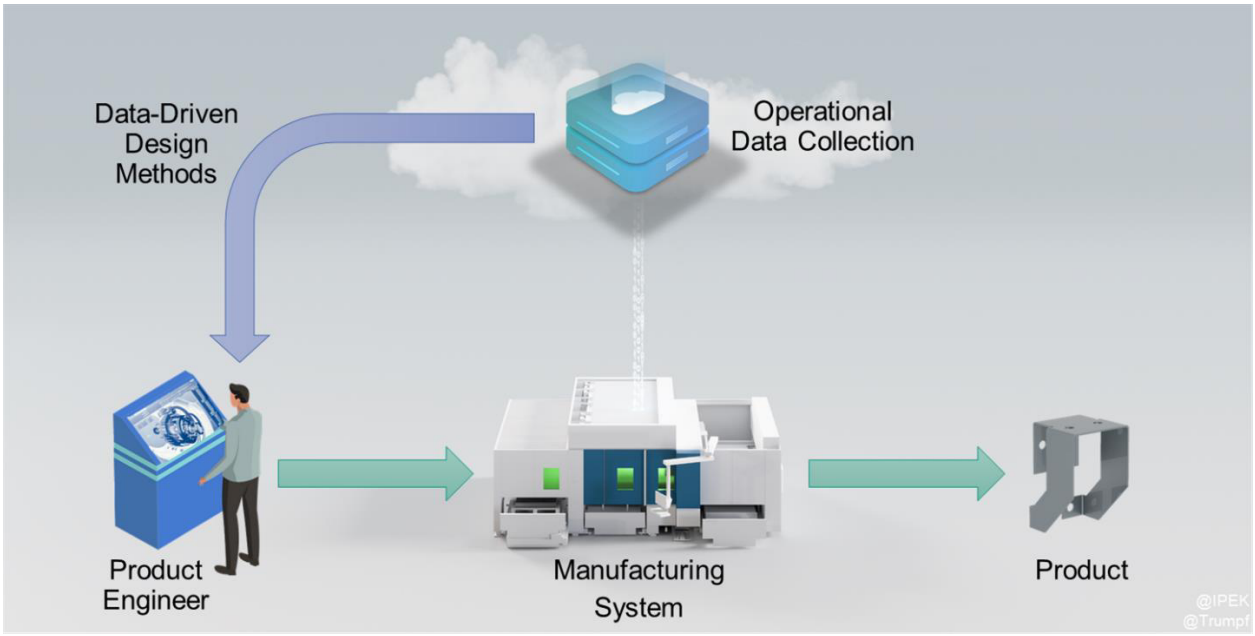
Data-Driven Design Methods in the Development of Cyber-Physical Systems in Manufacturing

In the domain of mechatronic production system development, there's a significant opportunity to gather and employ extensive operational data. While some companies have amassed large quantities of data, methods are missing to harness its potential to optimize technical systems. A crucial aspect of empowering developers to effectively utilize this operational data is ensuring its accessibility and processability, enabling them to design both individual components and the entire system more efficiently. Depending on data availability, a range of data-driven methods, including machine learning algorithms, can be employed to manage and analyze these large data volumes effectively and provide support for the development of future product generations.



Task:

- Literature research
- How to utilize data analysis of operational data to enhance the development of future product generations?
- Possible meetings/interviews with industry partners
- Based on following references:
  - Paper 1: Integrating Various Levels of Data Analytics to Exploit Product-Usage Information in Product Development
  - Paper 2: Reference Architecture for Metadata Management

Profile:

- Hands on mentality
- Not only reading literature but curiosity to use data science for the engineering community
- You work purposefully, independently and on your own responsibility