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

Dashboard for Digital Twin Construction

Project Characteristics

Modeling:		
Mathematics:		
Programming:		
Science:		

Task

In the context of a **digital twin of the construction site**, a **dashboard** is an indispensable piece of software to give construction workers, managers, and other construction personnel good insight into the current situation of the construction site. Most importantly, the dashboard should **display how the current situation compares to the construction plans** created during the design phase.

This Software Lab project will investigate how these differences between the plan and the actual status can be visualized intuitively. The team will develop a dashboard for DTC to display the current status of the construction site and the status of the data collection pipeline.

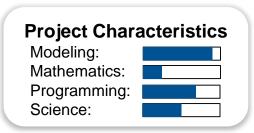*The DTC dashboard is composed of two main components:*

Data collection dashboard:
- Configuration files that define the expected raw data
- Control scripts to check if all expected data is available
- Map of the construction site with the current sensor locations
- Alert system

Construction project status dashboard:
- Develop a panel for 3D visualization of the building
- Show a comparison of as-planned and as-performed processes
- Display Key Performance Indicators (KPIs)

For the implementation **Grafana** will be used

[1] Sacks, R., Brilakis, I., Pikas, E., Xie, H., & Girolami, M. (2020). Construction with digital twin information systems. Data-Centric Engineering, 1, E14. doi:10.1017/dce.2020.16
[2] https://github.com/aws-samples/aws-iot-twinmaker-samples
[3] https://grafana.com/grafana/