



Analyzing the Treatment Process of Diagnostic Related Groups using Process Mining

Today, healthcare organizations are facing the challenge of increasing care needs and budget limitations. Inefficient resource management, false treatment of patients, and long waiting times result in high costs for these organizations and, most importantly, could result in a worse medical condition of the patient. Diagnostic Related Groups (DRG) are used for hospital reimbursement and categorize all possible reasons for hospitalization into mutually exclusive groups which are similar in terms of both clinical characteristics and the hospital resources they consume. So far, the similarities and deviations of the treatment process of patients within one DRG are unknown, which results in a classification based on only a few features, such as the number of diagnosis codes and age, at the end of the hospital stay. To identify these similarities and deviations, Process Mining can be used by extracting process-related insights from process execution data.

The process execution data will be extracted from a real-world dataset ([MIMIC-IV](#)) containing hospital stays for patients admitted to a tertiary medical center in the US. It provides a comprehensive view on the journey through the hospital, including laboratory measurements, medications administered, vital signs documented, DRG assignments, and so on.

You will get the opportunity to conduct a Process Mining Project in MIMIC-IV, where you will investigate the similarities and deviations of the treatment process of a specific DRG. Further, you will think about how the means of Process Analysis, such as a Process Model, can be used to communicate findings to a medical specialist.

Study Programs

ITSE, DE, DH

Contact

Prof. Dr. Mathias Weske [mathias.weske@hpi.de]

Jonas Cremerius [jonas.cremerius@hpi.de]