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A case study on the application of process mining techniques in offshore plant construction process analysis

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Construction of an offshore plant is a huge project involves many activities and resources. Furthermore, multiple projects are usually carried out simultaneously. For this reason, it is difficult to manage the offshore plant manufacturing processes. To improve current processes, it is important to analyze and find problems while the project is ongoing. That analysis usually requires a few months to perform. To shorten the analysis period, this study proposes a method of analyzing offshore plant manufacturing processes using process mining. Process mining is a technique that derives useful information related to processes from the event logs in information systems. It generates a process model from event logs and measures performance of processes, tasks, and resources. In the proposed method, a process model can be generated from the data of several simutaneous projects. The generated process model is used to analyze the overall processes in a company. The generated process model then can be compared to the planned process model to find delays. Moreover, workload analysis can be conducted in terms of resources capacity. Actual workloads for each department can be calculated and compared to its capacity. To verify the proposed process mining method, a case study is conducted. The proposed method was applied to analyze the offshore plant construction process in a heavy industry company in Korea.

Biography

SookYoung Son is a staff of Hyundai Heavy Industries, the world's largest shipbuilding company. She has completed her MS in Management Engineering at the Ulsan National Institute of Science and Tehcnology (UNIST). Her research interests include process mining, manufacturing process analysis, data mining, and supply chain management.

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