Process mining :Artificial Data Science

The course "Process Mining: Data Science in Action" offered by Eindhoven University of Technology on the Coursera platform, and designed by Professor Wil van der Aalst, serves as a bridge between model-based process analysis and data analysis techniques. By providing concrete datasets and easy-to-use software, this course enables the direct application of data science knowledge to analyze and improve processes across various domains.

Consider a scenario where a hospital aims to optimize its patient treatment processes. Through process mining, students or professionals learn to use data analysis techniques to uncover behavior patterns in event records, and then relate them to existing process models or create new ones. For instance, by analyzing event records of patients progressing through different treatment stages, process mining could identify bottlenecks, excessive waiting times, or inefficient steps, enabling the hospital to make targeted improvements to its processes.

The course covers a range of techniques, such as process discovery, conformance checking, and process model enrichment. For example, in the customer service domain of a multinational company, process mining could be used to analyze customer-agent interaction data and identify steps where processes deviate from predefined models, thereby enhancing efficiency and customer satisfaction.

Another concrete example could be that of an airline seeking to optimize its baggage management system. By analyzing event records related to the movement of baggage through the system, process mining could reveal error patterns or inefficiencies in the process, enabling the company to make adjustments to reduce delays and baggage losses.

Additionally, the course addresses practical aspects such as obtaining appropriate event data, selecting process mining software, and translating data into actionable insights. Through real-world examples and hands-on exercises, participants acquire the necessary skills to conduct process mining projects in a structured and effective manner.