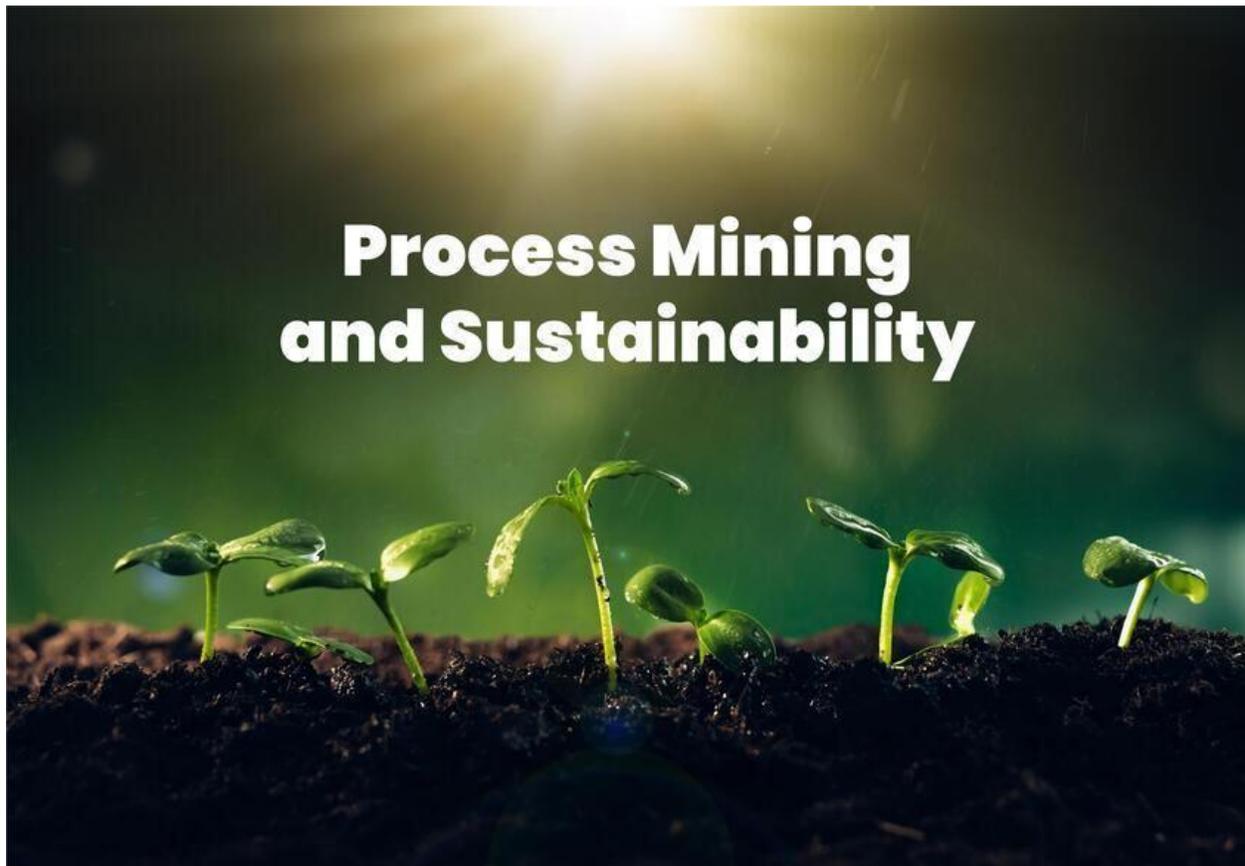


Connecting Process Mining and Sustainability

09/12/2022

Prof. Wil van der Aalst recently joined the Scientific Advisory Board of Clima^{tiq} with the goal of creating new carbon-intelligent process mining solutions.



From a technological point of view, one can consider "sustainability" as just another Key Performance Indicator (KPI) next to profit margin, average order fulfillment time, customer churn rate, conversion rate, etc. However, it is far from trivial to define sustainability KPIs. Even when considering only emission factors for the seven greenhouse gases covered by the Kyoto Protocol (i.e., carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride) there is little consensus on how to measure them precisely. Therefore, companies like Clima^{tiq} are essential to objectively measure emissions. The Clima^{tiq} Carbon Emissions Calculation API provides access to thousands of emission factors stored in an open database to accurately calculate the carbon emissions of any activity. There is a close link to process mining, because it starts from the activities that cause emissions, and process mining has

demonstrated to be a powerful technology to improve KPIs by reducing execution gaps. Combining the Climaq Carbon Emissions Calculation API with process mining tools such as the Celonis EMS allows organizations to make informed decisions improving sustainability by reducing greenhouse gases. Celonis already provides apps to make procurement decisions and transportation decisions based on such data. However, this is just the start, and more research is needed. Let's create exploratory ProM plug-ins and PM4Py extensions connecting process mining to emission factor databases.

Given the synergetic effects between process mining and emission calculations, Prof. Wil van der Aalst joined the Scientific Advisory Board (SAB) of Climaq with the goal of better supporting data-supported sustainability decisions. See the Climaq blog post <https://www.climaq.io/blog/announcing-climaq-scientific-advisory-board-sab> presenting the new SAB. Also see <https://www.climaq.io/blog/climaq-partners-with-celonis-embedded-enterprise-carbon-intelligence> for concrete examples already possible and used today.

If you have exciting case studies combining process mining and sustainability-related data, do not hesitate to contact the PADS group. We are looking for novel applications and specific process mining challenges that help to improve our environment!