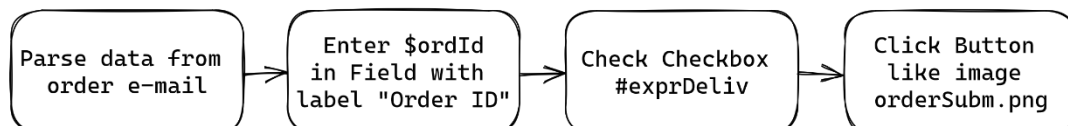


Model-driven RPA Bot Development

The automation of day-to-day routines in business processes promises companies massively improved efficiency resulting in time and cost savings, while lifting knowledge workers from tedious tasks. It also reduces the chance of errors and can help ensure compliance. However, traditional automation often requires extensive projects to adapt and re-shape the company's IT landscape. This is especially the case when legacy applications with no automation possibilities are in place.

Robotic Process Automation (RPA) offers a new, less intrusive approach for automating routines: By operating on the user interface level, RPA can automate even older legacy applications without requiring changes to the existing IT infrastructure. So-called RPA bots simulate the behavior of a user in front of a computer and can help with mundane and common tasks, such as collecting, transferring, and matching data between different systems. Most RPA tools provide a graphical user interface that allows to build automations using predefined "building blocks."

While automating user interfaces using RPA leads to time and cost savings, it also introduces several points of failure. When relying on visual features to identify UI elements during automation, changes to the UI can lead to run-time exceptions or even to silently introduced errors. For example, if an RPA bot needs to identify a button using a screenshot reference, any visual changes to the button will render the bot unusable. Or, if the business logic behind an input field changes, an RPA bot might enter wrong data unnoticed. Especially when considering an extensive use of RPA in large companies, this tremendously increases the maintenance effort.



The proposed master project will investigate how this issue can be mitigated by decoupling RPA bots from the actual user interface as a first step. Introducing an abstraction layer may help to reduce exceptions at run-time as well as the overall maintenance effort. In a second step, the project will research how the bot modeling experience can be improved and simplified. For example, using contextual information, the building blocks necessary to automate a given UI could be selected and updated automatically. The project work will include guided scientific research as well as the implementation of a (web-based) prototype.

We are excited to see what ideas you come up with!

If you have any questions, feel free to reach out to Maximilian.

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