The Role of R in Lab Automation

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Wet labs of life science companies increasingly make use of advanced measurement technologies that are organized in automated workflows. Many of the steps in these workflows require statistical analyses prior to feeding the results of one step into the next step. Also, the final experiment data require automated reporting to support scientists in the experiment assessment and decision making.

The advantages of using R in this context are well known as it provides companies with cutting edge statistical algorithms that can be directly transferred from Academia to the workbench in industry. In this presentation we will share our experiences in bridging R and lab equipment computers, LIMS systems and end user applications from a variety of settings. We will distill best practices from examples in the analysis of RTqPCR data, EEG signal processing, behavioral experiment data or compound activity screens. The secret weapon to support the diverse workflows and computational requirements is the R Service Bus, an open source integration tool specifically designed to cope with R integration exercises.

OpenAnalytics (2010–2011). The R Service Bus. `http://www.openanalytics.eu/r-service-bus`.