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Creating Generic Software Solutions for Specific Research Issues - Research Software Product Development without Reinventing the Wheel

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Certain research questions necessitate highly specialized software solutions tailored to the unique intricacies of the problem at hand. These questions often arise from the complex and nuanced nature of the research domain, demanding precise methodologies and algorithms that cater to specific requirements. In such cases, attempting to implement a generic solution might prove counterproductive and time-consuming. Nevertheless, while certain research questions demand highly specific software solutions, it is equally important to recognize instances where commonalities and synergies exist across diverse projects. In scenarios where the fundamental requirements overlap, the development of generic solutions becomes not only feasible but also advantageous. By leveraging shared expertise and identifying these common threads, research software engineers can create versatile research software products that cater to multiple research inquiries whereas reinventing the wheel leads to inefficient allocation of resources, as valuable time and effort are expended on solving problems that may have already been addressed by existing solutions. Striking the right balance between tailored and generic solutions not only optimizes resource utilization but also establishes a foundation for standardized practices, promoting collaboration and interoperability. This approach allows the research community to benefit from both the precision of specialized tools and the efficiency gained through the development of reusable, standardized software components. This nuanced approach acknowledges the diversity of research questions while harnessing the potential for synergies and collaborative advancements in research software engineering.

Creating research software products requires a combination of technical expertise, domain knowledge, effective collaboration with researchers, and a commitment to best practices. It is also imperative to incorporate the identification of overlapping requirements across diverse projects into the work culture of the RSE team.

The SUB software and service development team has been developing solutions for technical and methodological issues in project teams using collaborative and agile methods such as Scrum for over 10 years. In this session we will describe how we try to recognize synergies at an early stage, which methods and strategies we use to develop generic solutions in project work, what challenges we encounter, and how we manage them. Reinventing the Wheel

Slot length

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