Models and Methods for Discovering Automatable Activity Segments in a Service–Oriented Environment

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Although computers were invented barely fifty years ago, their enormous value and impact on society has already relegated much of computing discipline into a commodity status. While the pedagogical theories of computing have failed to keep pace with the rapid technological advances, of immense importance, a systematic approach to achieving reliable systems design despite complexity compounding on virtually daily basis, is sorely lacking. The immense array of sub-disciplines of computer science including digital hardware, computer architecture, programming languages, databases, networking, artificial intelligence, software engineering, etc. are rapidly coalescing into a new sub-discipline, labeled as the “service industry.”

In this presentation my focus will be the exploration of methods of detecting and exploiting opportunities for automation in a given set of service functions. For any given service-oriented application, we will first develop an activity sequence diagram, a flowchart that will delineate the sequence of the steps involved and the causal dependencies that bind them together. We will examine the classification of service activities, key characteristics of the building blocks, and the canonical models that can guide the practical realization of the proposed approach. Given that the service function must necessarily operate toward the benefit of mankind, it is critical to examine the execution paradigm of the constituent components.