

# Foreword

*by Wil van der Aalst*

Over the last decade, service-orientation has dramatically changed the way systems are being realized. Information systems have become more loosely coupled and the state-of-the-art service technology allows for the automated discovery, creation, and adaptation of services. Despite the successes of service-driven computing, there are still many open problems and challenges, thus justifying this *Handbook of Research on Architectural Trends in Service-Driven Computing*.

The handbook aims to explore challenges and techniques related to context and semantic awareness, adaptability, and reliability of service-driven applications to facilitate the design, implementation, and operation of adaptable and dependable systems. It includes 29 highly relevant chapters distributed over 3 sections: (1) “Dynamic and Adaptive Architectures for Service-Driven Computing,” (2) “Integration in the Service-Driven Ecosystem,” and (3) “Service-Driven Computing in the Cloud.”

What will the future of service-driven computing bring? Personally, I find it interesting that in the context of Web services, typically, all kinds of events are being recorded. It is possible to record events related to activities inside services or interactions between them. The autonomous nature of services and the fact that they are loosely coupled makes it important to monitor and analyze their behavior. This aspect has not received sufficient attention in the field, and I see this as an opportunity to apply process mining. Process mining aims to discover, monitor, and improve real processes by extracting knowledge from event data readily available in service-oriented systems. This should also become an integral part of service-oriented architectures. I like to refer to this as “service mining.” There is clearly a need for more evidence-based approaches as the field is maturing. The different platforms and architectures proposed in this handbook provide a good starting point for this.

I hope and expect that you will enjoy reading this book. It provides many interesting and innovative ideas that fuel the imagination of what the future may bring.

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