Preface

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Biographical notes: Shiyong Lu is an Associate Professor in the Department of Computer Science at Wayne State University and the Director of the Big Data and Scientific Workflow Laboratory. He received his PhD in Computer Science from Stony Brook University in 2002. His research focuses on scientific workflows and big data. He is an author of two books and over 100 papers. He is the founding chair of IEEE International Symposium of Scientific Workflows and Big Data Science since 2007. He is a co-Editor-in-Chief of *International Journal of Cloud Computing and Services Science*. He is a senior member of the IEEE.

Mike Wu joined Oakland University as a Visiting Assistant Professor in 2008 and transferred to a tenure-track Assistant Professor in 2010 after finishing his 20-year career in the Air Force as an IT Officer. During his active duty service in the Air Force, he was sponsored by the US Department of Defense and received his MS in Computer Science from US Air Force Institute of Technology in Dayton, Ohio in 1993 and PhD in Computer Science from Texas A&M University in College Station, Texas in 2001. He has participated in several mission-critical software systems development projects, including the Airborne Early Warning and Control System and the Air Traffic Management and Control System since he was assigned as a Military Tactical Software Project Manager at Northrop Grumman Aerospace Corporation in 1993. His research topics include web services, cloud computing, and software engineering.

1 Introduction

Workflow technology and service-oriented architecture have expanded substantially into the healthcare industry over the last few years. While other industries have used workflow technology to automate and improve business processes successfully, many challenges remain to be addressed in order to successfully use these concepts in the dynamic and complex environment of healthcare. For example, how can we make sure data sharing for electronic health records will conform to national or state regulatory policies? How can business process management be applied in hospitals not only to improve efficiencies but also to reduce errors and thus improve patient safety? Our special issue aims to answer some of these questions.

Our special issue received five submissions, among which we selected three papers for publication. The first article was contributed by Ma and Yang from Wayne State University. They have introduced the business process concept into the sterile processing department domain to automate and streamline the cleaning, disinfection, and sterilisation operations in the Veterans Affairs Medical Centre at Detroit. A prototype SPDFLOW has been developed to showcase their approach along with the experiences and lessons learned from the application.

The second article is contributed by Stevovic et al., a collaboration between University of Trento, HP Laboratories, and CRG – Centro Ricerche GPI. The paper proposes a compliance-aware data management solution for EHR systems, which allows healthcare organisations to define and enforce their own security and regulatory compliance requirements for accessing and sharing healthcare data.

The third contribution by Russo and Mecella, presents and discusses the application of process-oriented solutions in the healthcare domain, covering both administrative/organisational processes and medical processes. We hope that readers will find the papers of this special issue interesting and inspiring.