Call for Papers – Special Session on
"Agile Development Practices for Big Data Analytics systems used in Small and Medium-sized Business)"
for SEKE 2022

http://ksiresearch.org/seke/seke22.html

The Thirty Fourth International Conference on Software Engineering and Knowledge Engineering
Virtual conference at the KSIR Virtual Conference Center, Pittsburgh, PA, USA,
from July 1 to July 10, 2022.

The conference aims at bringing together experts in software engineering and knowledge engineering to discuss on relevant results in either software engineering or knowledge engineering or both. Special emphasis will be put on the transference of methods between both domains. Submission of papers and demos are both welcome.

Paper submission deadline: March 31, 2022

AIM
This special session in SEKE 2022 pursues to advance on the study of emergent development practices based on the agile -such as Scrum (Sutherland, 2010) and XP (Beck, 1999)- and lightweight -such as the ISO/IEC 29110 standard series (ISO/IEC, 2011)- software development paradigms that provides a valuable alternative to the plan-driven paradigm (Boehm & Turner, 2003; Martinez-Plumed et al., 2019) for developing Big Data Analytics systems used in small and medium-sized business (SMBs).

RATIONALITY
Big Data Analytics (BDA) systems are software systems developed to provide valuable insights to decision-makers exploiting Big Data sources (Laney, 2001; Davoudian & Liu, 2020). Successful BDA systems have been reported in the literature (Davenport, 2006) in diverse domains such as Healthcare, Logistics, Finance, Marketing, Retail, and Education in the last decade.

However, it was recently identified that the systematic development of BDA systems is not usually pursued by organizations, and despite the adaptation of a few comprehensive development methodologies for Data Analytics systems (Martinez et al; 2021) such as CRISP-DM, SEMMA, and KDD, many failed BDA system development projects are frequent (Davenport & Malone, 2021). Consequently, systematic development methodologies for BDA systems have been demanded (Davenport & Bean, 2022).

Given that agile and lightweight development practices use small development teams – between 3 to 10 people-, and mainly address projects of short-term scope – between 1 to 6 months-, and thus of small costs, these plausible practices are highly suitable to be used for small and medium-sized business (SMBs), and ultimately to take advantage of their available Big Data sources for SMBs contexts (Maroufkhani et al., 2020).

TOPICS
This special session invites researchers from the disciplines of Data Science and Software Engineering to submit high-quality conceptual or empirical research manuscripts on agile and lightweight development practices for BDA systems suitable to be used in SMBs. Topics of interest for the special issue include but are not limited to the following ones:

- Conceptual studies on frameworks of agile and lightweight tenets and practices for BDA systems.
- Conceptual comparative studies between plan-driven development methodologies and agile and lightweight practices for BDA systems.
- Statistical survey comparative studies on the implementation of plan-driven development methodologies and agile and lightweight practices for BDA systems.

- Statistical survey studies on successful implementation models of agile and lightweight practices for BDA systems.
- Case studies on successful and failed BDA systems using agile and lightweight practices for BDA systems.
- Simulation studies – system dynamics, discrete event, agent-based or hybrid- on project development models of agile and lightweight practices for BDA systems.
- Design research studies on project development models of agile and lightweight practices for BDA systems.
- Experimental studies on project development models of agile and lightweight practices for BDA systems.
- Conceptual studies on open source platforms and tools for developing BDA systems with agile and lightweight practices.

All previous topics are expected to be studied in the context of SMBs.

REFERENCES

Beck, K. (1999). Embracing change with extreme programming. Computer, 32(10), 70-77.

Boehm, B., & Turner, R. (2003). Using risk to balance agile and plan-driven methods. Computer, 36(6), 57-66.

Davenport, T. H. (2006). Competing on analytics. Harvard Business Review, 84(1), 98-107.

Davenport, T., & Malone, K. (2021). Deployment as a Critical Business Data Science Discipline. Harvard Data Science Review. https://doi.org/10.1162/99608f92.90814c32

Davenport, T. & Bean, R. (2022). The Quest to Achieve Data-Driven Leadership: A Progress Report on the State of Corporate Data Initiatives – Foreword. Special Report, New Advantage Partners.

Davoudian, A., & Liu, M. (2020). Big data systems: A software engineering perspective. ACM Computing Surveys (CSUR), 53(5), 1-39.

ISO/IEC (2011). ISO/IEC TR 29110-5-1-2:2011 Software Engineering - Lifecycle Profiles for Very Small Entities (VSES) - Part 5-1-2: Management and Engineering Guide: Generic Profile Group: Basic Profile. ISO - International Organization for Standardization.

Laney, D. (2001). 3-D Data Management: Controlling Data Volume, Velocity and Variety. META Group Research File 94m9.

Maroufkhani, P., Ismail, W. K. W., & Ghobakhloo, M. (2020). Big data analytics adoption model for small and medium enterprises. Journal of Science and Technology Policy Management, 11(4), 483-513.

Martínez-Plumed, F., Contreras-Ochando, L., Ferri, C., Orallo, J. H., Kull, M., Lachiche, N., ... & Flach, P. A. (2019). CRISP-DM twenty years later: From data mining processes to data science trajectories. IEEE Transactions on Knowledge and Data Engineering, 33(8), 3048-3061.

Martinez, I., Viles, E., & Olaizola, I. G. (2021). Data science methodologies: Current challenges and future approaches. Big Data Research, 24, 100183.

Sutherland, J. (2010). Jeff Sutherland's Scrum Handbook. Boston: Scrum Training Institute.

IMPORTANT DATES

Paper submission due:	**Midnight EST, March 31, 2022 (Extended Hard Deadline)**
Notification of acceptance:	April 20, 2022
Early registration deadline:	May 10, 2022
Camera-ready copy:	May 10, 2022

INFORMATION FOR AUTHORS

All submissions must not be published or under consideration for publication in a journal or in a conference with proceedings. Papers will be evaluated based on originality, significance, technical soundness and clarify of exposition. Depending upon the results of evaluation a paper may be accepted as regular paper (6 pages) or short paper (4 pages) in this special session.

Papers must be written in English. An electronic version (Postscript, pdf, or MS Word format) of the full paper should be submitted using the following URL: https://www.easychair.org/conferences/?conf=seke22. Please use Internet Explorer as the browser. Manuscript must include a 200-word abstract and to have and extension either 4 or 6 pages of double column formatted Manuscript for Conference Proceedings (include figures and references but exclude copyright form). **All papers submitted to this special session must be named with the prefix ADPBD_.** Detailed instructions for manuscript preparation can be consulted at: http://ksiresearch.org/seke/seke22author.html

REGISTRATION INFORMATION FOR ACCEPTED PAPERS:
- Registration fee per accepted paper is 505 USD
- Please consult SEKE Conference Registration left tab at http://ksiresearch.org/seke/seke22.html

PROCEEDINGS AND JOURNAL PUBLICATIONS:
Accepted papers will be published in the SEKE22 Proceedings (online and printed versions). SEKE22 Proceedings are indexed at:
- **DBLP**
- **SCOPUS**
- **INSPEC**
- **Compendex**
- **Library of Congress**

ISSN for SEKE series: 2325-9000 (print)
ISSN for SEKE series: 2325-9086 (online)

Best ranked papers from the full SEKE22 conference will be selected for a super-sized **special issue of the International Journal of Software Engineering and Knowledge Engineering (IJSEKE, JCR with IF 1.47)** to be published in November/December 2022 for early dissemination.

CO-CHAIRS
- Prof. Manuel Mora, Autonomous University of Aguascalientes, Mexico
- Prof. Jorge Marx Gómez, University of Oldenburg, Germany
- Prof. Hector Duran-Limon, University of Guadalajara, Mexico

SHORT BIOS OF CO-CHAIRS

Manuel Mora is a full-time Professor in the Information Systems Department at the Autonomous University of Aguascalientes (UAA), Mexico. Dr. Mora holds an M.Sc. in Computer Sciences (Artificial Intelligence area, 1989) from Monterrey Tech (ITESM), and an Eng.D. in Engineering (Systems Engineering area, 2003) from the National Autonomous University of Mexico (UNAM). He has published over 90 research papers in international top conferences, research books, and journals such as IEEE-TSMC, European Journal of Operational Research, Int. Journal of Information Management, Engineering Management, Int. J. of Information Technology and Decision Making, Information Technology for Development, Int. J. in Software Engineering and Knowledge Engineering, Computer Standards & Interface, Software Systems and Modeling, Expert Systems, and Software Quality Journal. Dr. Mora is a senior member of ACM (since 2008), an SNI at Level II, and serves in the ERB of several international journals indexed by Emergent Source Citation Index focused on decision-making support systems (DMSS) and IT services systems.

Prof. Dr. Jorge Marx Gómez studied Computer Engineering and Industrial Engineering at the University of Applied Sciences Berlin (Technische Fachhochschule Berlin). He was a lecturer and researcher at the Otto-von-Guericke-Universität Magdeburg (Germany) where he also obtained a Ph.D. degree in Business Information Systems with the work Computer-based Approaches to Forecast Returns of Scrapped Products to Recycling. From 2002 till 2003 he was a visiting professor for Business Informatics at the Technical University of Clausthal (TU Clausthal, Germany). In 2004 he received his habilitation for the work Automated Environmental Reporting through Material Flow Networks at the Otto-von-Guericke-Universität Magdeburg. In 2005 he became a full professor and chair of Business Information Systems at the Carl von Ossietzky University Oldenburg (Germany). His research interests include Very Large Business Applications, Business Information Systems, Federated ERP-Systems, Business Intelligence, Data Warehousing, Interoperability, and Environmental Management Information Systems.

Hector A. Duran-Limon Ph.D., is currently a full Professor at the Information Systems Department, University of Guadalajara, Mexico. He completed a Ph.D. at Lancaster University, England in 2002. Following this, he was a post-doctoral researcher until December 2003. He obtained an IBM Faculty award in 2008. His research interests include Cloud Computing and High-Performance Computing (HPC). He is also interested in Software Architecture, Software Product Lines, and Component-based Development. In 2006, He was invited to create a Ph.D. program in Information Technologies for the University of Guadalajara, becoming a member of the Academic Council.