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Alexander Artikis

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Executive Summary

This deliverable presents the call-for-papers of the SPEEDD special issue on Online Forecasting and Proactive Analytics that will be hosted in the Big Data Research journal.

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1. Introduction

1.1 History of the document

Version	Date	Author	Change Description
0.1	1/10/2015	Alexander Artikis (NCSR)	Set up the document
1	26/1/2016	Alexander Artikis (NCSR)	Content adjusted

2. Special Issue Proposal on Online Forecasting and Proactive Analytics

Rapid social, economic and political changes are leading organizations to shift their thinking from reactive to proactive in order to forecast opportunities and threats that could affect their business. Eliminating or mitigating an anticipated problem, or capitalizing on a forecast opportunity, can substantially improve our quality of life, and prevent environmental and economic damage. Changing traffic light policies and speed limits to avoid traffic congestions, for example, will reduce carbon emissions, optimize public transportation and increase the quality of life and productivity of commuters. Similarly, adding credit cards to watch-lists as a result of forecasting fraud will reduce the cost inflicted by fraudulent activities on payment processing companies and merchants, and consequently lower credit card rates.

Unlike traditional real-time analytics, that refers to the just-in-time processing of recent data, providing the opportunity to additionally implement (short-term) forecasting supports proactive decision-making. To forecast problems and opportunities that may actually take place in the near future, high velocity data streams storming from (heterogeneous and distributed) sources need to be correlated in real-time with high volume historical data. Moreover, forecasting techniques must be resilient to the lack of veracity of the streaming as well as the historical data.

We invite quality submissions focusing on various aspects of forecasting using Big Data. We welcome both theoretical contributions as well as papers describing interesting applications. Broad topics include:

- Complex event forecasting
- Optimisation techniques for forecasting
- Forecasting under uncertainty
- Machine learning for model construction
- Scalability and high throughput issues in forecasting
- Distributed forecasting systems
- Provenance in forecasting
- Benchmarks, performance evaluation, testbeds
- Verification of forecasting models
- Visual analytics for forecasting and proactive decision-making
- Adaptive forecasting systems
- Real-world applications of forecasting systems, such as analytics for the Internet-of-Things (IoT), online web analytics, smart grid analytics and fleet management.

Special Issue Co-Editors

Alexander Artikis
NCSR Demokritos
<http://users.iit.demokritos.gr/~a.artikis/>

Alexander Artikis is a Research Associate in NCSR “Demokritos” in Athens, Greece, where he leads the Complex Event Recognition lab (<http://cer.iit.demokritos.gr/>), and a Lecturer in the University of Piraeus. He holds a PhD from Imperial College London on the topic of multi-agent systems, while his research interests lie in the areas of artificial intelligence and distributed systems. He has published papers in related journals and conferences, such as Artificial Intelligence, Machine Learning, the ACM Transactions on Autonomous and Adaptive Systems, the ACM Transactions on Computational Logic, and the IEEE Transactions on Knowledge and Data Engineering. Dr. Artikis has been working on several EU-funded projects on event processing, such as PRONTO, USEFIL and INSIGHT. He is the scientific coordinator of the SPEEDD project (<http://www.speedd-project.eu/>).

Themis Palpanas
Paris Descartes University
<http://www.mi.parisdescartes.fr/~themisp/>

Themis Palpanas is a Professor of Computer Science at the University of Paris V – Paris Descartes, France, where he is co-director of diNo, the data management group. He received the BS degree from the National Technical University of Athens, Greece, and the MSc and PhD degrees from the University of Toronto, Canada. He has previously held positions at the University of Trento, where he founded and co-directed the database group, and at IBM T.J. Watson Research Center. He has also worked for the University of California, Riverside, and visited Microsoft Research and the IBM Almaden Research Center. He is the author of nine US patents, three of which have been implemented in world-leading commercial data management products. He is the recipient of three Best Paper awards, and the IBM Shared University Research (SUR) Award. He has served as General co-Chair for VLDB 2013, Associate Editor for VLDB 2017, and Workshop Chair for EDBT 2016 and ADBIS 2013/2014. He is a founding member of the Event Processing Technical Society, and is serving as an Associate Editor in the TKDE, BDR, IDA journals, as well as on the Editorial Advisory Board of the IS journal, and the Editorial Board of the TLDKS Journal.

Peter Pietzuch
Imperial College London
<https://www.doc.ic.ac.uk/~prp/>

Peter Pietzuch is an Associate Professor at Imperial College London, where he leads the Large-scale Distributed Systems (LSDS) group (<http://lsds.doc.ic.ac.uk>) in the Department of Computing. His research focuses on the design and engineering of scalable, reliable and secure large-scale systems, with a particular interest in data management and big data issues. He has published over sixty research papers in international venues, including SIGMOD, VLDB, ICDE, USENIX ATC, NSDI, ICDCS, CoNEXT, CCS, Middleware and DEBS. He regularly serves on the program committees of SIGMOD, VLDB and ICDE. He has co-authored a book on Distributed Event-based Systems published by Springer. Before joining Imperial College London, he was a post-doctoral fellow at Harvard University. He holds PhD and MA degrees from the University of Cambridge.

Matthias Weidlich
 Humboldt-Universität zu Berlin
<http://www.matthiasweidlich.com>

Matthias Weidlich is a Junior Professor at Humboldt-Universität zu Berlin (HU), leading the Process-Driven Architectures group that is funded by an Emmy Noether grant from the German Research Foundation (DFG). Before joining HU, he held positions as a research associate at Imperial College London, and as a research fellow and adjunct lecturer at the Technion - The Israel Institute of Technology, Israel. He holds a PhD from the Hasso Plattner Institute (HPI), University of Potsdam, Germany. His research focuses on process analysis, event-based systems, data interoperability, and uncertainty management and his results appeared in journals, such as IEEE TSE, IEEE TKDE, Information Systems, and The Computer Journal and in the proceedings of leading international conferences, such as BPM, CAiSE, SIGMOD, and ICDE. He is the Programme Co-Chair of BPM 2015, the General Co-Chair of DEBS serves as an Area Editor of Elsevier's Information Systems.

Additional Information (not for posting).

Annual or upcoming meetings where relevant papers appear:

- International Conference Very Large Data Bases (VLDB)
- ACM SIGMOD Conference (SIGMOD)
- International Conference on Distributed Event-Based Systems (DEBS)
- International Joint Conference on Artificial Intelligence (IJCAI)
- International Artificial Intelligence Conference (AAAI)
- IEEE Conference Data Engineering (ICDE)
- International Conference on Computer Vision and Pattern Recognition (CVPR)
- International Conference on Business Process Management (BPM)
- International Web Rule Symposium (RuleML)

Dissemination strategies:

- Flyers at above-mentioned conferences
- Mailing lists: DBWorld, event@cig, SEWorld
- Web communities: <http://www.complexevents.com>, <http://www.rtinsights.com>