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24th European Conference, ADBIS 2020
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Proceedings

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Obituary

In Memoriam: Sherif Sakr

Sherif Sakr was a rising star in the constellation of database researchers. After obtaining a BSc and MSc degrees in Computer Science from the Faculty of Computers and Information at Cairo University in 2001 and 2003, respectively, he joined the ranks of the Computer and Information Science of Konstanz University, where he obtained a doctorate in 2007 for his research on XQuery Processing on top of relational databases. He then joined NICTA Research Centre (now CSIRO Data61 Lab) and University of New South Wales, where he developed a research agenda in the field of graph indexing and querying.

Following these appointments, he joined the ranks of the Department of Health Informatics at King Saud bin Abdulaziz University for Health Sciences (KSAU-HS), Saudi Arabia, where he pursued various applications of graph processing and big data technologies in the medical field. Along the way, he held visiting researcher and scholar appointments at Microsoft Research, Redmond, USA (2011), Nokia Bell Labs, Ireland – Formerly Alcatel-Lucent Bell Labs (2012), Humboldt-Universität zu Berlin, Germany (2015), University of Zurich, Switzerland (2016), and Technical University of Dresden, Germany (2016). This infatigable research journey led him to write the *Handbook of Big Data Technologies* (2017) and later the *Encyclopedia of Big Data Technologies* (2019), which will remain as one of his most notable legacies to the field of database research.

In 2018, Sherif joined University of Tartu's Institute of Computer Science in 2018 funded by a Top Researcher grant from the Estonian Research Council. During his two-years tenure, he created and led a Data Systems Research Group, which he grew from 1 to 16 researchers and research students in less than 24 months. During this time, he developed and spread his vision. He imagined a highly scalable engine for distributed event processing. His efforts immediately produced notable results: at CAiSE 2019 his work on stream analytics earned a Best Paper Award. Sherif was a tireless researcher. In fact, he started in parallel a research stream on explainable machine learning. At ADBIS 2019, he presented a hybrid local-global approach for generating explanations from black-box machine learning models.

Sherif Sakr will be remembered for generously giving his time to his community. During his career, Prof. Sakr was associate editor of the *Cluster Computing* journal and *Transactions on Large-Scale Data and Knowledge-Centered Systems* (TLDKS). He served as an editorial board member and guest editor for several reputable top-ranked scientific journals. He toured the world as a distinguished speaker of both the ACM and the IEEE Computer Society. Prof. Sakr published more than 150 refereed research

publications in international journals and conferences. He was also author of six books, including *Big Data 2.0 Processing Systems* (2016). His research received more than 4,000 citations¹. In 2019, he received the Best Arab Scholar Award from the Abdul Hammed Shoman Foundation.

Above and beyond all of the above, Sherif Sakr was a good person. The kind of person one would like to meet both personally and professionally. He cared that everyone felt comfortable and approached life with enthusiasm. He forged a group upon his values: hard work, intellectual honesty, and mutual support. His colleagues will remember Sherif as a passionate and visionary scientist, and someone who had time for everyone, devoting much time to ensuring that his students were aiming high and pushing them to maximize their potential.

Sherif Sakr was due to organize the ADBIS conference in Tartu in 2021. Unfortunately, he passed away during the night on March 24, 2020. His team will take over his mission to host ADBIS 2021.

June 2020

Marlon Dumas
Riccardo Tommasini

¹ cf. Google Scholar 2020.

Preface

The 24th European Conference on Advances in Databases and Information Systems (ADBIS 2020) was set to be held in Lyon, France, during August 25–28, 2020, in conjunction with the 24th International Conference on Theory and Practice of Digital Libraries (TPDL 2020) and the 16th EDA days on Business Intelligence & Big Data (EDA 2020). However, because of the worldwide COVID-19 crisis, ADBIS, TPDL, and EDA had to take place online during August 25–27, 2020. Yet, the three conferences joined their forces to propose common keynotes, workshops, and a Doctoral Consortium.

ADBIS established itself as a highly recognized conference in Europe. It aims at providing an international forum for exchanging research achievements on databases and data engineering, both from practical and theoretical perspectives. ADBIS also aims at promoting the interaction and collaboration of the database and data engineering as well as information systems research communities worldwide.

Previous ADBIS conferences were held in Saint Petersburg (1997), Poznan (1998), Maribor (1999), Prague (2000), Vilnius (2001), Bratislava (2002), Dresden (2003), Budapest (2004), Tallinn (2005), Thessaloniki (2006), Varna (2007), Pori (2008), Riga (2009), Novi Sad (2010), Vienna (2011), Poznan (2012), Genoa (2013), Ohrid (2014), Poitiers (2015), Prague (2016), Nicosia (2017), Budapest (2018), and Bled (2019).

ADBIS 2020 attracted 82 paper submissions, which were reviewed by an International Program Committee constituted of members from 28 countries. The Program Committee selected 13 long research papers for inclusion in this volume (acceptance rate: 16%). The selected papers span a wide spectrum of topics related to the ADBIS conference from different areas of research in database and information systems, including big data and social media analysis, business intelligence, and machine learning.

This volume also includes extended abstracts of the three keynotes that related most to ADBIS' topics, which were given by Amr El Abbadi, from the University of California (USA), Johann Gamper, from the Free University of Bozen-Bolzano (Italy), and Ioana Manolescu from Inria Saclay–Île-de-France and École Polytechnique (France).

Finally, we would like to express our sincere gratitude to everyone who contributed to make ADBIS 2020 a successful event:

- authors, for submitting their research papers to the conference;
- keynote speakers who honored us with their talks at ADBIS 2020;
- members of the Program Committee and external reviewers, for dedicating their time and expertise to build a high-quality program;
- members of the ADBIS Steering Committee for their trust and support, and especially its chair Yannis Manolopoulos;
- our academic and private sponsors and partners: the Universities of Lyon 2 and Lyon 3, IDEXLYON, the ERIC laboratory, OnlyLyon, Springer for publishing

these proceedings, the Coalition for Networked Information, as well as our PCO Insight Outside;

- last but not least, all members of the Organizing Committee, who had to switch from a physical organization to an online organization in troubled times.

June 2020

Jérôme Darmont
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Keynote Speakers' Bios

The 24th European Conference on Advances in Databases and Information Systems (ADBIS 2020), the 24th International Conference on Theory and Practice of Digital Libraries (TPDL 2020), and the 16th EDA days on Business Intelligence & Big Data (EDA 2020) were “colocated” online during August 25–27, 2020, because of the COVID-19 crisis. This joint event was set to be held originally in Lyon, France.

Keynotes were common to all three conferences. This chapter introduces the five keynote speakers of high scientific profile who honored us with an invited speech. We thank them very much. Extended abstracts of keynotes by: Amr El Abbadi, Johann Gamper, and Ioana Manolescu are included in this LNCS volume. Extended abstracts of keynotes by Verónica Peralta and Elaine Toms are included in the EDA and TPDL proceedings, respectively.

Amr El Abbadi (University of California, USA)

Amr El Abbadi is a Professor of Computer Science at the University of California, Santa Barbara. He received his Bachelor in Engineering from Alexandria University, Egypt, and his PhD from Cornell University. His research interests are in the fields of fault-tolerant distributed systems and databases, focusing recently on Cloud data management and blockchain-based systems.

Prof. El Abbadi is an ACM Fellow, AAAS Fellow, and IEEE Fellow. He was Chair of the Computer Science Department at UCSB from 2007 to 2011. He has served as a journal editor for several database journals, including *The VLDB Journal* and *IEEE Transactions on Computers and The Computer Journal*. He has been Program Chair for multiple database and distributed systems conferences. He currently serves on the Executive Committee of the IEEE Technical Committee on Data Engineering (TCDE) and was a board member of the VLDB Endowment from 2002 to 2008.

In 2007, Prof. El Abbadi received the UCSB Senate Outstanding Mentorship Award for his excellence in mentoring graduate students. In 2013, his student, Sudipto Das received the SIGMOD Jim Gray Doctoral Dissertation Award. Prof. El Abbadi is also a co-recipient of the Test of Time Award at EDBT/ICDT 2015. He has published over 300 articles in databases and distributed systems and has supervised over 35 PhD students.

Johann Gamper (Free University of Bozen-Bolzano, Italy)

Professor Johann Gamper’s main research areas are temporal databases, time series data, data warehousing and data analytics, approximate query answering, data summarization, and graph matching. His research concentrates on database technologies with a focus on processing and querying temporal data.

Johann Gamper is author of 120+ publications in international journals and conference proceedings, many of which are in the most prestigious outlets of database

systems (TODS, VLDBJ, TKDE, SIGMOD, VLDB, ICDE). He regularly serves as reviewer for technical journals, PC member, and organizer of conferences.

Ioana Manolescu (Inria Saclay–Île-de-France et École Polytechnique, France)

Doctor Ioana Manolescu is a Senior Researcher who leads of the INRIA/LIX CEDAR project-team, focused on Rich Data Exploration at Cloud Scale. She is also part-time professor at École Polytechnique, Paris.

Her research interests include models, tools, and algorithms for data journalism and journalistic fact-checking; efficient ontology-mediated query answering; and cloud-based management of web data.

Ioana Manolescu is also member of the PVLDB Endowment Board of Trustees.

Verónica Peralta (University of Tours, France)

Verónica Peralta is Associate Professor at the University of Tours, France, and a member of the Fundamental and Applied Computer Science Laboratory (LIFAT), since 2008. She received her PhD in Computer Science from the University of Versailles and the University of the Republic of Uruguay in 2006. Her research interests include data quality, data warehousing, exploratory analysis, OLAP, query recommendation, and query personalization.

Her teaching mainly concerns databases, data warehousing, and information systems. She has taught multiple courses since 1996, in several universities of France, Uruguay, and Argentina. She has also several years of professional experience as a data warehouse developer and consultant.

Elaine Toms (University of Sheffield, UK)

Elaine Toms is currently Professor of Information Innovation Management, Management School, University of Sheffield, UK. She previously held posts at the iSchool, University of Sheffield; the Faculty of Management and School of Information Studies, Dalhousie University, Canada; and the Faculty of Information, University of Toronto, Canada. She was the first information scientist to be appointed to a Canada Research Chair.

Over the course of her career, she has held multiple administration roles (e.g., Director of Teaching Quality Enhancement and of Research); been actively engaged in professional associations including ASIST (serving on the Board of Directors); has served as program chair for multiple conferences (e.g., ASIST, Hypertext, and JCDL); and currently serves on the editorial board of IPM and is an associate editor of JASIST.

She completed her PhD at Western University, Canada, from which she went on to examine multiple facets of the information interaction problem from interface issues to interruptions and task, with a particular focus on evaluation. Her work has been funded by multiple groups on both sides of the pond (e.g., both the science and social science research councils in Canada, OCLC, Heritage Canada, Canada Foundation for Innovation, Horizon 2020).

She has been an investigator with multiple research networks (e.g., NECTAR, Network for Effective Collaboration Through Advanced Research; PROMISE, Participative Research labOratory for Multimedia and Multilingual Information Systems Evaluation).

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