

SIGMIS ANNUAL REPORT

JULY 2019 - JUNE 2020

Submitted by: Fred Niederman, SIG Chair

Overall, the ACM SIGMIS is extremely viable and vibrant. We do face some challenges with both strengths and areas of growth as discussed below.

1. Awards Given

SIGMIS Lifetime Achievement Award:

This year the SIGMIS Lifetime Achievement award was presented to **Dr. Thomas Ferratt**, Professor Emeritus University of Dayton, USA. This represents the second time the SIG has presented the award.

The announcement was posted in our conference proceedings (see appendix 1).

Early Career Award:

This year we inaugurated the inaugural Early Career award and presented it to **Dr. Christian Maier**, University of Bamberg, Germany.

The announcement was posted in our conference proceedings (see appendix 2).

Conference Awards:

- **2020 Magid Igbaria Outstanding Conference Paper of the Year Award Recipients**

“Reducing Techno-Invasion and Techno-Overload: A Qualitative Study Analyzing Communication Measures and Rules” by Katharina Pflügner, Lea Reis, Christian Maier and Tim Weitzel (University of Bamberg) SIGMIS-CPR'20: Proceedings of the 2020 on Computers and People Research Conference, June 2020, pp 114–122<https://doi-org.ezp.slu.edu/10.1145/3378539.3393855>

- **Doctoral Travel Reimbursement Scholarships**

These were not awarded in 2020 due to postponement/cancellation of our annual conference due to Covid 19 pandemic.

The DATABASE for Advances in Information Systems

Annual awards, Vol. 50.

Each year, DATA BASE undertakes a nomination of Best Paper to the AIS Senior Scholar's competition. This year, covering the content from Vol. 50, our Pre-Eminent Editorial Board members voted in favor of the following:

Best Paper:

Niederman, F., & March, S. T. (2019). Broadening the conceptualization of theory in the information systems discipline: A meta-theory approach. *The DATABASE for Advances in Information Systems*, 50(2), 18-44.

Dr. Fred Niederman serves as Shaughnessy Endowed Professor at Saint Louis University. His PhD is from the University of Minnesota in 1990. He has recently been named as the incoming editor in chief for Communications of AIS. His areas of research interest include: IS personnel, IS project management, philosophy of science applied to IS, qualitative IS research methods, effects on IS of mergers and acquisitions, global IS, and group collaboration and teams. He is proud to be counted as a member of the "circle of compadres" for the KMPG PhD Project.

Salvatore T. March is the David K. Wilson Professor of Management (Emeritus) at the Owen Graduate School of Management, Vanderbilt University. He received a BS in Industrial Engineering and MS and PhD degrees in Operations Research from Cornell University. His primary research interests are in the areas of Design Science, Database Design, Conceptual Modeling and Business Intelligence.

Runner-up to best Paper:

Gupta, S., & Bostrom, R. P. (2019). A Revision of Computer Self-Efficacy Conceptualizations in Information Systems. *The DATABASE for Advances in Information Systems*, 50(2), 71-93.

Saurabh Gupta is a doctoral graduate of the University of Georgia, and is Professor and Ph.D. discipline lead at Kennesaw State University. He is actively involved in research that examines end-user computing, eLearning, knowledge management and the Theory of Information Systems.

Robert Bostrom is Professor of Information Systems at University of Georgia. Bostrom is a doctoral graduate of the University of Minnesota, and his research interests are focused on Business Process Management, high-performing individuals, facilitation, technology-supported learning, and effective design of organizations via integrating human and technological dimensions.

Also, each year, the Editors of DATA BASE analyze production statistics to identify candidates for Best Senior Editor and Best Reviewer. This year's award winners are:

Best Senior Editor: Craig van Slyke

Craig van Slyke is Mike McCallister Eminent Scholar in Computer Information Systems for the College of Business at Louisiana Tech University in Ruston, Louisiana. Dr. van Slyke was a ‘jack of all trades’ in 2019, often tackling editorial responsibilities for papers that were atypical for the journal. He ensured a timely review processes for each manuscript.

Best Reviewer: Rene Moquin

Rene Moquin is a doctoral graduate of Baylor University. He is Assistant Professor at the Department of Computer and Information Technology in the Neil Griffin College of Business of Arkansas State University, in Jonesboro, Arkansas. Dr. Moquin undertook a larger than average number of review assignments and was both developmental and thorough in his assessment of the assigned manuscripts.

The editors-in-chief would like to thank all of our senior editors, reviewers, and authors – without whom we could not produce the quality and innovation that our readership has come to expect. It is with much gratitude that we look forward to another year of *The DATABASE for Advances in Information Systems*.

2. Significant papers on new areas published in proceedings

Because we did not move to a virtual setting when we cancelled our in-person conference, we did not have a live keynote address. However, the following were added to the digital library.

Artificial Intelligence as Innovation Accelerator

By Christian Mühlroth

Updating the Information Systems Curriculum: The ACM / AIS IS2020 Joint Project

By Paul M. Leidig and Greg Anderson

Diverse Topics:

From among a wide variety of papers, two that stood out and illustrate the range of topics the membership addresses were:

Analysing Gender Bias in IT Job Postings: A Pre-Study Based on Samples from the German Job Market by Stephan Böhm, Olena Linnyk, Jens Kohl, Tim Weber, Ingolf Teetz, Katarzyna Bandurka, and Martin Kersting

Abstract: In Germany, as in many other industrial nations, there is currently a shortage of skilled workers in the IT sector, also known as the “war for talents”. It is becoming

increasingly difficult for companies to find suitable personnel using traditional recruiting instruments. Against this background, but also due to legal requirements, it is becoming more and more important that job postings are formulated in such a way that they have the greatest possible impact and no group of suitable applicants feels excluded. This study presents an approach that can be used to measure the gender bias in job postings in particular. A respective tool could provide recruiters with an instrument to identify and prevent unwanted gender bias. In our study, the prototype of such a tool will be developed and initially applied to analyze job postings in the IT sector of the German job market in comparison to samples from the automotive and health care sectors. We present some key statistics of this analysis and an outlook on future work.

Examining the Influence of Product Innovation on Social Media Platforms: Evidence from Instagram by Reza Alibakhshi and Shirish C. Srivastava

Abstract: Grounding our discussion in social penetration and resource allocation theories, we propose and test the influence of introducing a new product, namely Instagram Story, on the usage and content creation behavior on the Instagram platform. Employing a quasi-experimental setting, we investigate the influence of introducing this new product on user engagement and content generation. Our findings identify the significant influence of Instagram Story on the user engagement with the original product i.e. Instagram Post and the overall resource expenditure by content providers. Through our study we delineate several important implications for both research and practice. Specifically, our study provides significant insights for platform owners and content providers to better design and implement new products on social media platforms.

3. Significant programs that provided a springboard for further technical efforts

In 2019, we awarded one research grant award. This winning submission was from PhD candidate:

- Marfri Gambal, Aston Business School, Birmingham, United Kingdom, gambalm@aston.ac.uk

EXPLORING INNOVATION READINESS IN OUTSOURCING RELATIONSHIPS: CLIENT AND SERVICE PROVIDER PERSPECTIVES.

Supervisory team:

Aleksandre Asatiani, Aston Business School, Birmingham, United Kingdom, a.asatiani@aston.ac.uk

Julia Kotlarsky, The University of Auckland, Auckland, New Zealand, j.kotlarsky@auckland.ac.nz

Pawan Budhwar, Aston Business School, Birmingham, United Kingdom, p.s.budhwar@aston.ac.uk

Due to the cancellation of the in-person conference, we are still looking into alternative mechanisms by which their work can be presented to the community.

Last year, we received only 2 proposals, however, this year the number was up to 14. The research award committee will release results on August 30 of the winning proposals.

Our 2020 Committee members are: Tim Weitzel, Jeria Quesenberry, Michelle Kaarst-Brown, and Damien Joseph. Fred Niederman chairs the committee.

4. Innovative programs which provide service to some part of your technical community

This year while cancelling the in-person conference, we moved the doctoral consortium into a virtual mode. This included pre-work by the accepted doctoral students to generate discussion questions, as well as student presentations.

The leadership team was comprised of five co-chairs who both organized and facilitated the 2020 Doctoral Consortium:

- Deborah Armstrong (djarmstrong@business.fsu.edu)
- Andreas Eckhardt (andreas.eckhardt@ggs.de)
- Indira Guzman (indira.guzman@trident.edu)
- Michelle Kaarst-Brown (mlbrow03@syr.edu)
- Tim Weitzel (tim.weitzel@uni-bamberg.de)

Presentations were by the following five doctoral student participants:

- AJ Lauer - Occupational Culture, Identity, and Career Commitment in High Performance Computing
- Sebastian Schötteler - Evolution of Enterprise Social Media Networks: A Research Proposal
- Leonard Przybilla - Investigating Social Phenomena in IT Project Teams as Dynamic Entities
- Maximilian Haug - Mass Communication on Social Media: The Case of Fake News
- Alexandra Thompson - Exploring the Roles and Contributions of Participants as Designers in Projects Utilizing Augmented Reality

5. Events or programs that broadened participation either geographically, or among under-represented members of your community and;

We continue to co-sponsor the ICIS conference each December where we support the best doctoral dissertation in information systems award, host a reception, and staff a booth primarily to promote our publication, DATABASE. We also fund the annual best PhD dissertation award for AIS. Last year we were the only group invited to introduce these doctoral students to the opportunities of our program.

We are planning the 2021 conference to be in Nuremberg Germany. This continues a tradition of frequent annual meetings outside the US. It also represents an effort to capitalize on the groundwork done for this year's conference that we could not actualize.

6. A very brief summary of the key issues that SIG membership will have to deal with in the next 2-3 years.

Finances

Over the past 20 years due to strong revenues from the digital library, modest annual profits from our annual conference, and frugal management of expenses the SIG achieved significant budget surpluses. However, this may have come at the cost of less than needed reinvestment in new programs and services. Over the past 3 years we have budgeted for investing in stronger support for our publication, greater support for doctoral student travel to our conference, new awards, and a new research grant. This has resulted in stronger conference attendance, a stronger publication, and enthusiasm for our programs. However, at some point the current investments will need to be used, at least in part, to enhance current revenue streams or create new ones. We still have a significant amount of funds available for continued investment, but in the long run this will need to be of concern to the SIG leadership.

The DATABASE for Advances in Information Systems

Our publication, The DATABASE for Advances in Information Systems, continues a concerted marketing campaign of research conference visibility focused on impact and intellectual innovation. We have distributed 4 issues regularly for many years. Last year (2018) we added a 5th issue focused on cybersecurity which has already been distributed. We plan to add 5th issues for the next two coming years. Our current co-editors, Thomas Stafford and Deborah Armstrong have been settling into the role and are preparing initiatives to move the journal forward. Note that we achieved a citation index above 1.0 for the first time. This represents the achievement of a significant milestone for the journal.

In recent years, a new section of *philosophy of science* and another on *research methods* (particularly path analysis) have been added to updating the strategic direction of the publication. Note also that submissions continue to increase, pressuring the review system, however, editors are recruiting new associate editors as needed. We are also moving from requiring university host institutions from funding publication related expenses such as proofreading and hosting booths at key conferences to taking these on within the SIG. We expect that this will provide much greater support for the publication team and extend their ability to increase quality and inform the community of our efforts.

We continue seeking a way that allows AIS and ACM to extend distribution of DATABASE to AIS members. Due to the nature of revenue streams and business models, these discussions are sensitive, but we are hopeful that this can be developed as a greater conduit for mutual benefit. We are also looking at ways to contract with ACM for a broader range of editorial services despite being categorized as a “newsletter” rather than journal.

Social Media and Communications:

SIGMIS has a Facebook page (<https://www.facebook.com/acmsigmis>) with 113 followers and a LinkedIn group (<https://www.linkedin.com/groups/5148399>) with 96 members, and our new Twitter account (<https://twitter.com/acmsigmis>) with 20 followers so far.

As these are relatively new, we haven’t yet developed a thorough sense of their effectiveness or how to best use them to communicate the right amount and type of information with members, but we continue to enhance our presence in the social media arena.

2021 SIGMIS Conference:

We have begun the planning for the 2021 conference and are considering returning to a rotation from western US, to Midwest, to East Coast, to Germany (or alternative outside of US site). The idea is to be able to schedule further ahead and to regularize our conference processes. Because our schedule was disrupted, we are seeking to return to Nuremberg next year and push other locations back. We are also looking at alternatives if we are unable to resume in-person conferences in a timely manner and what providing services to our membership will look like in a wholly online world.

Collaborations:

Damien Joseph continues to provide excellent leadership of the in-cooperation program with other groups seeking our support relative to their conferences. It turns out there are a much larger number than expected of requests in this area and we want to redesign our approach. It takes some effort to evaluate each of these in detail and decide whether our support is warranted as well as how to generate more benefit to our members.

SIGMIS was in cooperation with the following 12 conferences:

1. CDTI '19: International Conference on Computing and Digital Technologies Innovation
2. CHIRA 2019 – 3rd International Conference on Computer-Human Interaction Research and Applications
3. 9th International Conference on cloud computing and services scienc
4. CSEDU '19: International Conference on Computer Supported Education
5. DATA 2019 - 8th International Conference on Data Science, Technology and Applications
6. ENASE '19: 14th International Conference on Evaluation of Novel Approaches to Software Engineering
7. FEMIB '19: International Conference on Finance, Economics, Management and IT Business
8. HEALTHINF '19; International Conference on Health Informatics
9. ICEIS '19: 21st International Conference on Enterprise Information Systems
10. ICIS '19: International Conference on Information Systems
11. Kmiks '19: International Conference on Knowledge Management, Information and Knowledge Systems
12. SBSI '19: XV Brazilian Symposium on Information Systems

We have begun a process of seeking out collaborations with AIS special interest groups particularly regarding leadership and diversity/inclusion. The strategy is to make focused events and activities of interest to ACM SIGMIS members available before or during all major MIS conferences – ICIS, HICSS, AMCIS, ECIS, and PACIS – as well as our own standalone conference. This is slower going than expected but I anticipate will continue to grow over the next few years.

Strategic Focus:

In terms of strategy, we have reasserted central interest in IS personnel, users in organizations and society, leadership, and inclusion. We also welcome for both the conference and publication a wide range of MIS topical areas including ethics, all aspects of work, and IS entrepreneurship. The question will be whether it will be more effective to focus more narrowly on traditional topics or to continue expanding the range of issues we deal with.

ELECTIONS:

It is clear that at least two and potentially all the current elected officers will not be returning for another election cycle. I have recruited two experienced and well-respected members of the SIG community to serve as a nominating committee and will supply them with a long list of people to contact for possible candidacy. We have an unusually strong set of people who would serve well if they can be persuaded to take on this responsibility.

Appendix 1 – Lifetime Achievement Award

2020 ACM SIGMIS CPR

We are pleased to announce that Dr. Thomas W. Ferratt, Professor Emeritus at the University of Dayton, is the recipient of the 2020 ACM SIGMIS CPR Lifetime Achievement Award. He served in leadership roles, including Chair, Conference Chair, and Program Chair, with ACM's Special Interest Group on Computer Personnel Research (SIGCPR). Subsequent to its merger with SIGMIS, he continued to serve in leadership roles with the CPR Conference. Consistent with the conference theme, a major stream of his research has focused on the management of information systems professionals. His research has been published and featured in a variety of publications, including *MIS Quarterly*, *Information Systems Research*, *Journal of the Association for Information Systems*, *Journal of Management Information Systems*, *MIS Quarterly Executive*, *Communications of the ACM*, *The DATA BASE for Advances in Information Systems*, *Information and Management*, *Communications of the AIS*, *Academy of Management Journal*, *Human Relations*, *Decision Sciences*, and *Computerworld*.



His 2000 *MIS Quarterly* paper with Bob Roepke and Ritu Agarwal, "Aligning the IT Human Resource with Business Vision: The Leadership Initiative at 3M", received first place in the 1998 SIM Paper Competition. More recently, his 2016 paper with Fred Niederman and Eileen Trauth, "On the Co-Evolution of Information Technology and Information Systems Personnel," in *The Data Base for Advances in Information Systems*, received a 2017 Senior Scholars AIS Best Information Systems Publications Award,

Dr. Ferratt's academic career, beginning with his doctoral program at The Ohio State University in 1970, now spans 50 years. Prior to retirement at the end of 2016, he was at the University of Dayton for thirty years (1986-2016), where he served as an associate dean (1997-2000) and held the Sherman-Standard Register Endowed Chair in Management Information Systems from 2003 until his retirement. He also was on the faculty at Drake University (1974-84), where he served as a department chair (1980-82), a visiting faculty at Indiana University (1984-86), and a visiting scholar at the University of Southern California (2015).

He served as an Associate or Senior Editor on the editorial boards of *MIS Quarterly*, *Information Systems Research*, *Journal of the Association for Information Systems*, and *The DATA BASE for Advances in Information Systems*. He has collaborated on three books, serving as co-author with Ritu Agarwal of *Coping with Labor Scarcity in Information Technology – Strategies and Practices for Effective Recruitment and Retention* (1999), co-editor with Fred Niederman of *IT Workers – Human Capital Issues in a Knowledge-Based Environment* (2006), and, most recently, co-author with Jerry Power of *The Real-Time Revolution – Transforming Your Organization to Value Customer Time* (2019).

Appendix 2 – Early Career Award

ACM SIGMIS Early Career Award

It is our great pleasure to announce that Dr. Christian Maier, University of Bamberg, Germany, is the recipient of the 2020 ACM SIGMIS Early Career Award. Dr. Maier is the first recipient of this new honor that recognizes the early achievements of young scholars in the field of management information systems. The award will be announced annually at the ACM SIGMIS CPR Conference.



Following his studies in Information Systems, Dr. Maier received a three-year doctoral scholarship from the Bavarian Elite Foundation (BayEFG). He successfully completed his doctorate "Technostress: theoretical foundations and empirical evidence" in 2014. His work was awarded, among others, the Schmalenbach Prize 2015. In addition, his research work was nominated for Best Paper Awards (at both ECIS and ICIS) and was awarded the Magid Igbaria Outstanding Conference Paper Award of the ACM, among others.

Dr. Maier's research interests include individual acceptance and use of information technology (IT), technostress, work stress, IT addiction, resistance to new technologies and the IT workforce. His research on these topics has been published in various journals, including nine articles in the AIS Senior Scholar Journal Basket. The AIS ranking service lists Dr. Maier among the Top-50 information scholars worldwide according to publications in the AIS Senior Scholar Journal Basket during the last five years. His research is also recognized by various organizations that build on Dr. Maier's work.

Dr. Maier is also well known for his teaching and service endeavors. He served as program chair for the ACM SIGMIS CPR conference in 2020 and as track chair at various conferences. His teaching activities have been awarded among others with the award for excellent teaching at Bavarian universities provided by the minister of state for research.

Dr. Maier's achievements in research, teaching and service make him a role model for young scholars and students in the field of management information systems, such that it is our privilege to recognize his achievements with the ACM SIGMIS Early Career Award 2020.

Appendix 3 – Dissertation of the Year Award Winner

Sagar Samtani

Assistant Professor, Indiana University

Dissertation Title: “Developing Proactive Cyber Threat Intelligence from the Online Hacker Community: A Computational Design Science Approach”.

Synopsis: has afforded modern society with unprecedented benefits. Unfortunately, malicious hackers often exploit these technologies for cyberwarfare, hacktivism, espionage, or financial purposes, costing the global economy over \$450 billion annually. To combat this issue, many organizations develop Cyber Threat Intelligence, or knowledge about key hackers and emerging threats. Despite CTI’s value experts note that existing approaches are reactive in nature. Thus, cyber-attacks remain on an unfortunate uptick. CTI experts have suggested studying the international and ever-evolving online hacker community to address these concerns. However, online hacker community platforms, specifically forums, contain tens of thousands of unstructured, un-sanitized text records. Existing CTI analytics and behavioral and economic methodologies employed in extant IS cybersecurity inquiries were not designed for such data characteristics.

This dissertation presents four essays that adopt the design science approach to develop a series of novel CTI computational IT artifacts to solve a salient CTI issues. Essay I sets the foundation by developing a novel data and text mining framework to automatically extract and categorize malicious hacker exploits. Essay II expands upon this by automatically linking exploits and vulnerabilities detected by modern vulnerability scanners with a novel algorithm, the Exploit-Vulnerability Deep Structured Semantic Model. Essay III leverages graph convolutional networks and autoencoders to develop a novel deep learning architecture to identify the hackers and communities. Essay IV extends the model presented in essay III to identify emerging hacker exploits. Beyond the practical contributions provided by the presented IT artifacts, this dissertation offers numerous design principles to guide future computational cybersecurity IS research and other analytics related research inquiries.

