Gaining Proficiency in Design Science Research

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Performing design science research (DSR) is an audacious venture requiring key proficiencies for success. It is not a journey for those who value optimal and repeatable research results. DSR projects aspire to create innovative digital artifacts that solve real-world problems in bounded application domains by providing measurable improvements to conditions of the impacted individuals, groups, and societies. Research results include both the designed artifacts and evidence of their impacts along with a fuller scientific understanding via design theories of why the artifacts provide enhancements (or, disruptions) to the specific application contexts. However, even the most useful results are often eclipsed by rapid changes in the problem and solution spaces. This presentation will highlight the proficiencies needed to perform good DSR. The challenges of acquiring and applying these proficiencies are discussed with references to the latest DSR literature. While formidable challenges exist, doing good DSR is fun and satisfying. You change the world!

Recommended Readings:

1. A. Hevner and J. vom Brocke, "A Proficiency Model for Design Science Research Education," *Journal of Information Systems Education*, (34:3), Summer 2023, pp. 264-278. https://jise.org/volume34/n3/JISE2023v34n3pp264-278.pdf

2. J. vom Brocke, R. Winter, A. Hevner, and A. Maedche, "Special Issue Editorial – Accumulation and Evolution of Design Knowledge in Design Science Research: A Journey through Time and Space," *Journal of the Association for Information Systems*, (21:3), Article 9, 2020. Available at: https://aisel.aisnet.org/jais/vol21/iss3/9

3. R. Baskerville, A. Baiyere, S. Gregor, A. Hevner, and M. Rossi "Design Science Research Contributions: Finding a Balance between Artifact and Theory," *Journal of the Association for Information Systems* (19:5), Article 3, 2018. Available at: http://aisel.aisnet.org/jais/vol19/iss5/3

4. S. Gregor and A. Hevner, "Positioning and Presenting Design Science Research for Maximum Impact," *Management Information Systems Quarterly*, Vol. 37, No. 2, June 2013, pp. 337-355. https://www.jstor.org/stable/43825912

5. A. Hevner, S. March, J. Park, and S. Ram, "Design Science Research in Information Systems," *Management Information Systems Quarterly*, Vol. 28, No. 1, March 2004, pp. 75-105. https://doi.org/10.2307/25148625

About the Speaker:

Alan R. Hevner is a Distinguished University Professor and Eminent Scholar in the School of Information Systems and Management in the Muma College of Business at the University of South Florida. He holds the Citigroup/Hidden River Chair of Distributed Technology. Dr. Hevner's areas of research interest include design science research, information systems development, software engineering, distributed database systems, healthcare systems, and Internet of Things computing. He has published over 300 research papers on these topics and has consulted for a number of Fortune 500 companies. Dr. Hevner received a Ph.D. in Computer Science from Purdue University. He has held faculty positions at the University of Maryland and the University of Minnesota. Dr. Hevner is a Fellow of the American Association for the Advancement of Science (AAAS), a Fellow of the Association for Information Systems (AIS), and a Fellow of IEEE. He is a member of ACM and INFORMS. Additional honors include selection as a Parnas Fellow at Lero, the Irish software research center, a Schoeller Senior Fellow at Friedrich Alexander University in Germany, and the 2018 Distinguished Alumnus award from the Purdue University Computer Science Department. From 2006 to 2009, he served as a program manager at the U.S. National Science Foundation (NSF) in the Computer and Information Science and Engineering (CISE) Directorate.