

Title	Description	Supervisor
1. <b>Ethics of AI</b>	Advancements in artificial intelligence (AI), such as deep learning, have led to the widespread diffusion of AI in key decision-making domains (e.g., hiring). In this seminar, you will conduct a literature review on the growing ethical concerns of AI in management research.	Dr. Florian Pethig
2. <b>Perceptions of decisions by algorithms versus humans</b>	Advancements in artificial intelligence (AI), such as deep learning, have led to the widespread diffusion of AI in key decision-making domains (e.g., hiring). In this seminar, you will conduct a literature review on how people react to decisions by algorithms versus humans.	Dr. Florian Pethig
3. <b>Open code</b>	Open science aims to make scientific research transparent and accessible. More and more journals demand that the source code to produce the results published in a paper is made publicly available. In this seminar, you will collect and analyze the source code that researchers use to produce their statistical findings and develop best practices on how this code should be presented to interested readers.	Dr. Florian Pethig
4. <b>Econometric methods in Information Systems</b>	<p><b>Note:</b> For this seminar, it is recommended that you have already taken CC 503 Applied Econometrics or have other prior knowledge in econometrics.</p> <p>Information systems (IS) is a multidisciplinary field, with subcommunities influenced by computer science, management, and economics. Econometric methods, stemming from economics, are the current standard way of analyzing large amounts of data to enable causal inference. In IS, they have been used to study the impacts</p> <ul style="list-style-type: none"> <li>• of Craigslist on HIV transmission (Chan &amp; Ghose, 2014),</li> <li>• of Uber on drunk driving deaths (Greenwood &amp; Wattal, 2017),</li> <li>• of school broadband on student grades (Belo et al., 2014),</li> <li>• of Google Photos on other photo apps on the PlayStore (Foerderer et al., 2018),</li> </ul> <p>among others.</p>	Frederic Schlackl

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	<p>In your seminar, you should provide a descriptive review (Paré et al., 2015) of how econometric methods are used in Information Systems. This should include the method for establishing causal inference, the estimators used, use of theory, and the frequency across different journals.</p> <p>Belo, R., Ferreira, P., and Telang, R. 2014. "Broadband in School: Impact on Student Performance," <i>Management Science</i> (60:2), pp. 265–282. (<a href="https://doi.org/10.1287/mnsc.2013.1770">https://doi.org/10.1287/mnsc.2013.1770</a>).</p> <p>Chan, J., and Ghose, A. 2014. "Internet's Dirty Secret: Assessing the Impact of Online Intermediaries on HIV Transmission," <i>MIS Quarterly</i> (38:4), pp. 955–975. (<a href="https://doi.org/10.25300/misq/2014/38.4.01">https://doi.org/10.25300/misq/2014/38.4.01</a>).</p> <p>Foerderer, J., Kude, T., Mithas, S., and Heinzl, A. 2018. "Does Platform Owner's Entry Crowd Out Innovation? Evidence from Google Photos," <i>Information Systems Research</i> (29:2), pp. 444–460. (<a href="https://doi.org/10.1287/isre.2018.0787">https://doi.org/10.1287/isre.2018.0787</a>).</p> <p>Greenwood, B. N., and Wattal, S. 2017. "Show Me The Way to Go Home: An Empirical Investigation of Ride-Sharing and Alcohol Related Motor Vehicle Fatalities," <i>MIS Quarterly</i> (41:1), pp. 163–187. (<a href="https://doi.org/10.1163/9789401209380_061">https://doi.org/10.1163/9789401209380_061</a>).</p> <p>Paré, G., Trudel, M. C., Jaana, M., and Kitsiou, S. 2015. "Synthesizing Information Systems Knowledge: A Typology of Literature Reviews," <i>Information &amp; Management</i> (52:2), pp. 183–199. (<a href="https://doi.org/10.1016/j.im.2014.08.008">https://doi.org/10.1016/j.im.2014.08.008</a>).</p>	
<p><b>5. IoT and Cybersecurity</b></p>	<p>Through the Internet of Things (IoT), various physical devices can communicate and exchange data with each other. This is intended to bring efficiency and transparency gains in manufacturing and service companies. However, IoT also comes with considerable security risks (Alaba et al., 2017).</p> <p>In your seminar, you should provide an interdisciplinary literature review on cybersecurity aspects of IoT.</p> <p>Alaba, F. A., Othman, M., Hashem, I. A. T., &amp; Alotaibi, F. (2017). Internet of Things security: A survey. <i>Journal of Network and Computer Applications</i>, 88, 10–28. <a href="https://doi.org/10.1016/j.jnca.2017.04.002">https://doi.org/10.1016/j.jnca.2017.04.002</a></p>	<p>Frederic Schlackl</p>

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<b>6. Which topic modelling models are best used in online reviews</b>	<p>Using machine learning models to classify online reviews in specific topics has been used from many researchers in the IS discipline. In this seminar you will conduct a literature review on approaches that best detect topics by using topic modelling. You will also include the preprocessing, testing and how the data was used afterwards.</p> <p>Ciurumelea, A., Schaufelbühl, A., Panichella, S., &amp; Gall, H. C. (2017). Analyzing reviews and code of mobile apps for better release planning. <i>2017 IEEE 24th International Conference on Software Analysis, Evolution and Reengineering (SANER)</i>, 91–102. <a href="https://doi.org/10.1109/SANER.2017.7884612">https://doi.org/10.1109/SANER.2017.7884612</a></p> <p>Genc-Nayebi, N., &amp; Abran, A. (2017). A systematic literature review: Opinion mining studies from mobile app store user reviews. <i>Journal of Systems and Software</i>, 125, 207–219. <a href="https://doi.org/10.1016/j.jss.2016.11.027">https://doi.org/10.1016/j.jss.2016.11.027</a></p> <p>Guzman, E., Alkadhi, R., &amp; Seyff, N. (2016). A Needle in a Haystack: What Do Twitter Users Say about Software? <i>2016 IEEE 24th International Requirements Engineering Conference (RE)</i>, 96–105. <a href="https://doi.org/10.1109/RE.2016.67">https://doi.org/10.1109/RE.2016.67</a></p> <p>Sapul, M. S. C., Aung, T. H., &amp; Jiamthapthaksin, R. (2017). Trending topic discovery of Twitter Tweets using clustering and topic modeling algorithms. <i>2017 14th International Joint Conference on Computer Science and Software Engineering (JCSSE)</i>, 1–6. <a href="https://doi.org/10.1109/JCSSE.2017.8025911">https://doi.org/10.1109/JCSSE.2017.8025911</a></p>	Cara Damm
<b>7. Use of ML-Models in IS</b>	<p>In this seminar you will conduct a literature review on machine learning models that are used within the IS discipline. The goal is to determine if there are specific models and or use cases that are of increased interest.</p> <p>(You could also apply the question to one of the following industry sectors: manufacturing and retail)</p>	Cara Damm
<b>8. Which topic modeling models are used in IS and what are the primary use cases for it</b>	<p>In this seminar you will conduct a literature review on topic modelling models that are used within the IS discipline. The goal is to determine if there are specific use cases that are of increased interest.</p> <p>You could also apply the question to one of the following industry sectors: manufacturing and retail)</p>	Cara Damm
<b>9. Human decision-making in IS</b>	<p>Ever since human decision-making is bound by restrictions such as limited time or information availability forcing individuals to frequently rely on heuristics. In the current age, increasing information availability or access to decision support systems such as artificial intelligence, strengthens this trend.</p>	Jan Schilpp

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	Against this backdrop, you are asked to provide a literature review that reveals current models, the IS discipline uses when investigating how humans make decisions under different circumstances, e.g., complexity or time pressure.	
<b>10. The dark side of IS for the individual</b>	<p>Smart devices, artificial intelligence, or powerful analytics – just to name few – modern information systems significantly facilitate and improve our lives. For instance, they allow the individual to be more productive and efficient. However, modern information systems might lead to negative outcomes, such as addiction or stress, harming the individual's well-being.</p> <p>Against this backdrop, you are asked to provide a literature review that reveals the downsides of modern information systems found by the IS literature.</p>	Jan Schilpp