Topics IS 742 - FSS 2021

	Topic Area	Topic Description	Supervisor
1	The Role of Uncertainty in Software Development	The growth of the global machine learning market, which was valued at $1.58bn in 2017 and is expected to reach $20.83bn in 2024 (Forbes 2020), outlines the increasing importance of this technology. However, in machine learning development projects uncertainty plays a fundamental role (Wan et al. 2019). Hence, for a tremendous number of upcoming machine learning projects it will be particularly important to understand the antecedents, consequences, and handling strategies of uncertainties in software development endeavors. A written report and oral presentation will provide a thorough summary of prior research that investigated the role of uncertainty in the software development process. Forbes. 2020. "Roundup of Machine Learning Forecasts and Market Estimates, 2020," retrieved from: https://www.forbes.com/sites/louiscolumbus/2020/01/19/roundup-of-machine-learning-forecasts-and-market-estimates-2020: Accessed: January 08th, 2020. Wan, Z., Xia, X., Lo, D., Murphy, G. 2019 "How does Machine Learning Change Software Development Practices?," IEEE Transactions on Software Engineering.	Johann Dietz
2	Web users' interaction with Privacy Policies	Privacy policies are the usual "fair warning and implicit consent" way of communicating what happens to the data of a website visitor. Yet, privacy policies are widely recognized to be deeply flawed at actually informing users about the appropriation of their data. In your seminar, you should provide an interdisciplinary literature review about how web users interact with privacy policies.	Frederic Schlackl
3	Virtual Collaboration in IT organizations	For a variety of industries, virtual work and distributed collaboration has become well established over the past years. Virtual work is commonly defined by geographic dispersion and IT-enabled interaction between employees (Raghuram et al. 2019). Research has studied different setups of virtual work and distributed collaboration that support the organization to reach their strategic goals. Similarly, many different factors have been found that drive success of distributed collaboration (O'Leary et al. 2020). Recently, virtual collaboration has gained new momentum across industries, including IT organizations. In your seminar, you are expected to systematically review the literature about virtual collaboration in IT organizations.	Karoline Glaser
4	Development of ML Solutions	Machine Learning (ML) has made tremendous progress over the past years and the market for such solutions is still expected to grow. Thus, software solutions incorparting ML are advancing and gaining steady interest. Yet, ML changes software development practices. The nature of ML solutions entails challenges for software development and cause deviations from well-known processes. In your seminar, you should provide a literature review on software development practices of ML solutions.	Karoline Glaser

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5	Process Inefficiency and organisational performance; a systematic literature review	All organisations suffer more or less from inefficiencies. However, due to the hidden nature of this phenomenon, measuring its impact is far from trivial. Process mining helps us to understand the reality of processes by analysing the digital footprints of business processes. Although process mining does not provide a straight forward solution to this problem, it takes us much closer to the solution. In this seminar you are expected to read through the business process management literature and provide a summary of existing studies focusing on this problem including methods, techniques, case-studies, experiments, etc.	Fareed Zandkarimi
6	Process mining event log quality features. A systematic literature review.	Process mining event logs contain the collected data about the running processes of a company. Depending on the underlying information system (mostly the ERP software), the generated event log varies from very low quality (e.g. containing missing values, outliers, and noise) to standard and clean. According to these quality characteristics of an event log, different preprocessing actions should be considered. In this study, we are looking into possible event log features that reflect the behaviour of a given event log via e.g. indexes. The literature review should cover and cluster the existing techniques that have been implemented in process mining studies and provide basic information about each.	Fareed Zandkarimi
7	Organisational routines, a literature review.	Organizational routines are a central feature of human organizations and an explanatory mechanism in many of our most widely accepted theories. Since the concept was introduced by Stene (1940), organizational routines have been regarded as the primary means by which organizations accomplish much of what they do. While routines can be a source of inertia and inflexibility, they can also be an important source of flexibility and change (Feldman, M. S., & Pentland, B. T. 2003). In this literature review, you are expected to check the organisational routines' studies focusing on routine dynamics by means of analysing quantitative data sources.	Fareed Zandkarimi
8	Machine learning and risk taking	Extant risk-taking research tends to focus on explanation, mostly via regression analysis. However, risk taking can also be predicted, e.g. using machine learning techniques. In your seminar, you should provide an interdisciplinary review (e.g., computer science, psychology, marketing, information systems) that captures the state of research on predicting risk-taking decisions using machine learning.	Florian Pethig