MACHINE LEARNING MEETS LAW

February 5, 2025
Location: Lecture hall, Maria-von-Linden-Str. 6.

09:00: Opening Remarks

09:10: Ana-Andreea Stoica (MPI-IS): Integration of Generative AI in the Digital Markets Act: Contestability and Fairness from a Cross-Disciplinary Perspective
In this talk, we present challenges in the EU's Digital Markets Act (DMA) to cover issues of fairness and contestability with regard to generative AI. Through an interdisciplinary analysis, we highlight novel ways in which generative AI can permeate the space of gatekeepers. As the EU adopts AI-specific rules and considers possible amendments to the DMA, our paper proposes that generative AI should be added to the DMA's list of core platform services. This amendment is the first necessary step to address the emergence of entrenched and durable positions in the generative AI industry. Our analysis unveils economic factors (such as a first-mover advantage), computational perspectives (such as the influence of computing power in deciding which services and technologies can thrive), among many others.

09:50: Stefan Thomas (University of Tübingen): Algorithmic collusion in antitrust law

10:30: Coffee Break

11:00: Alina Wernick (University of Tübingen): AI Law in Time: Exploring the Temporal Scope of the AI Act
The EU AI Act aims to govern the entire life cycle of AI systems, safeguarding health, safety, and fundamental rights. This presentation delves into the temporal aspects of the AI Act: When do its obligations come into effect? Does it extend to AI research activities? What challenges arise in forecasting and mitigating the future risks of AI systems? The talk reflects on whether the temporal expectations of the AI Act's obligations align with the actual practice of AI development and adoption.

11:40: Kristof Meding (University of Tübingen): It's complicated. The relationship of algorithmic fairness and non-discrimination regulations in the EU AI Act
What happens when we ask machines to make fair decisions? As AI systems increasingly shape our lives—from loan approvals to hiring decisions—this seemingly philosophical question has become an urgent practical challenge. Recent headlines about AI discrimination have sparked global concern, prompting the EU's AI Act. But can we truly legislate algorithmic fairness? Our research dives into the tension between legislation and technical realities, revealing unexpected complexities at the intersection of computer science and law. We explore this critical frontier where code meets justice, and discover why collaboration between legal experts and computer scientists isn't just beneficial—it's essential for ensuring AI serves all of humanity fairly.

12:20: Lunch Break. Drinks and a light lunch will be served.

13:00: Celestine Mendler-Dünner (ELLIS Institute Tübingen): Quantifying performative power of online search
Algorithms on digital platforms impact consumption. As a result, self-preferencing has become an important concern for competition in the digital economy and the subject of major anti-trust investigations. In this talk, I will introduce performative power as a new notion of power that pinpoints the causal relationship between algorithmic actions and user behavior by directly quantifying a firm's ability to steer consumers. I will discuss the relevance of performative power in prediction and digital platform markets, and present an online experiment to measure performative power of online search.

13:40 Carsten Eickhoff (University of Tübingen): Juggling 1.8T Balls - The- The Frontier of LM Interpretation.
Modern language models show impressive performance across a wide range of domains and tasks. It is largely unknown how their general-purpose components such as Transformers concretely achieve these goals. This talk will discuss established and cutting-edge methods to model interpretation.

14:20: Coffee Break

14:40: Moritz Hardt (MPI-IS): Lawma: The Power of Specialization for Legal Tasks.
Annotation and classification of legal texts are vital to empirical legal research but traditionally costly due to reliance on human annotators. With advances in language models, scholars increasingly turn to prompting commercial models like GPT-4. In this talk, I present findings from a study of 260 legal text classification tasks, revealing that a lightly fine-tuned Llama 3 model consistently outperforms GPT-4, often by substantial margins. Fine-tuning on just tens to hundreds of examples yields superior high accuracy, and a single model can handle all tasks. These results highlight fine-tuned open-source models as a cost-effective, superior alternative for legal annotation tasks. Time permitting, I'll discuss progress and challenges in ongoing work about extending the Songer Appeals Court database annotations using model predictions.

15:20: Bob Williamson (University of Tübingen): Foundations of Machine Learning and the Law: Some questions and speculations
I will consider some questions arising from my study of foundations of machine learning systems and consider what implications they might have for the law, or what we might learn from the law in this context. The topics are: algorithms, data, averages, distributions, groups and privacy.

16:00: Closing Remarks

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