

Consequences of Artificial Intelligence for Urban Societies (CAIUS) Using Impact-Aware AI to Make Smart Cities Socially Equitable

Initiative: Künstliche Intelligenz – Ihre Auswirkungen auf die Gesellschaft von morgen

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AI systems help to efficiently allocate scarce public resources and are at the core of many smart city activities. Yet, the same systems may also result in unintended societal consequences, particularly by reinforcing social inequalities. CAIUS will identify and analyze such consequences. Using agent-based models (ABM), the effects of AI-based decisions on societal macro variables of social inequality such as income disparity will be analyzed. The data input for these ABMs consists of both Open Government Data and own surveys. The goal is to train AI systems to account for their social consequences within specific fairness constraints; this synthesis of ABM and fair reinforcement learning lays the groundworks for what we call "impact-aware AI" in urban contexts. With CAIUS, two smart city applications planned by partners in the Rhine-Neckar Metropolitan Region will be accompanied: dynamic pricing of parking space and traffic law enforcement via Internet-of-Things sensors. The results will contribute to research of human-AI interaction and will be condensed into general guidelines for decision-makers regarding the ethical implementation of AI-based decision-making systems in urban contexts.

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