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AI In Crime Prediction: Current Trends and Challenges

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Abstract

The integration of artificial intelligence (AI) into crime prediction has garnered significant scholarly attention, presenting innovative avenues for augmenting law enforcement capabilities and preempting criminal activities. AI methodologies, notably machine learning and deep learning, facilitate the analysis of extensive datasets—including historical crime records, social media interactions, and geospatial information—to discern patterns and forecast potential criminal events. Empirical studies have demonstrated the efficacy of AIdriven models in identifying crime hotspots and estimating crime rates, thereby informing proactive policing strategies (Mandalapu et al., 2023). However, the deployment of AI in this domain raises critical ethical and legal considerations, particularly concerning data privacy, algorithmic bias, and the potential reinforcement of existing social disparities. For instance, research indicates that predictive policing algorithms may inadvertently perpetuate biases present in historical crime data, leading to disproportionate surveillance of marginalized communities (Dressel,J. and Farid H., 2021). Therefore, while AI offers transformative potential in crime prevention, its application necessitates meticulous attention to fairness, transparency, and accountability to ensure that technological advancements equitably enhance public safety.

Keywords: Artificial Intelligence, crime prediction, predictive policing, machine learning, deep learning, algorithmic bias, law enforcement, data privacy, ethical AI