Laws Relating to Robotics: Legal Challenges and Future Directions

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Abstract*: The rapid development and integration of robotics into various sectors, from manufacturing and healthcare to autonomous vehicles and defense, have outpaced the evolution of legal frameworks needed to regulate them effectively. As robots become increasingly autonomous and capable of making decisions traditionally reserved for humans, they pose complex legal, ethical, and regulatory challenges. This paper explores the current legal landscape surrounding robotics, focusing on liability, safety standards, data protection, and ethical considerations. It also examines international approaches to robotics law, highlighting disparities and efforts toward harmonization. The paper concludes with recommendations for developing comprehensive legal frameworks that balance innovation with accountability, public safety, and ethical integrity.*

Keywords: Robotics Law, Artificial Intelligence, Liability, Autonomous Systems, Data Protection, Ethical Robotics, Regulatory Frameworks, International Law, Safety Standards, Human-Robot Interaction