

**LEGAL STANDING OF AI BASED ROBOTICS IN AUTO-MOBILE
INDUSTRY OF PAKISTAN COMPARED WITH GLOBAL-TRENDS:
CHALLENGES, OPPORTUNITIES AND IMPLICATIONS**



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DEDICATION

To the innovators navigating AI and law, this work is dedicated. Your pioneering spirits light the path of this exploration. This work is fervently dedicated to all those who tread this complex pathway.

To my unyielding mentors and the pursuit of justice. Your wisdom illuminates every page, painting a path of enlightenment and determination.

To my cherished family, your unwavering support forms the cornerstone of this scholarly endeavor. Your love, the persistent wind beneath my scholarly wings.

To my friends and esteemed colleagues, your camaraderie is the melody to the symphony of this academic journey. Your vibrant notes of encouragement harmonize my every stride.

In this ever-evolving panorama, intersection of AI and law, may this work contribute to the global dialogue, fostering mutual understanding, and highlighting the potential and challenges within.

Here's to new beginnings and continued exploration within the vast world of AI-based robotics in the automobile industry.

Thank you.

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إِنَّ مَعَ الْعُسْرِ يُسْرًا

"Verily, with hardship comes ease." (Quran, 94:6)

In the rigorous journey of pursuing my Master's in Law, the aforementioned Arabic verse has not only been a spiritual solace but a reflection of the collective effort and unwavering support from those whom I owe immense gratitude.

To the Almighty Allah, the perennial source of wisdom and strength, whose guiding light has been unfailing.

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وَتَوَكَّلْ عَلَى اللَّهِ وَكَفَىٰ بِاللَّهِ وَكِيلًا

"And put your trust in Allah, and sufficient is Allah as a Trustee." (Quran, 33:3)

LIST OF ACRONYMS

AAs	Artificial Agents
AGI	Artificial General Intelligence
AI	Artificial Intelligence
AIP	Artificially Intelligent Persons
ALI	Artificial Legal Intelligence
AVs	Autonomous Vehicles
CS	Computational Science
CCPA	California Consumer Privacy Act
ME	Mechanical Engineering
MLA	Machine Learning Algorithms
EE	Electrical Engineering
FMVSS	Federal Motor Vehicle Safety Standards
DL	Deep Learning
EU	European Union
ETO	Electronic Transactions Ordinance
ER	Ethical Relativism
VGS	Visual Guidance System
VCS	Vehicle Control System

VPS	Vehicle Piloting System
PII	Personally Identifiable Information
PDPB	Personal Data Protection Bill
IFR	International Federation of Robotics
ILO	International Labor Organization
MIT	Massachusetts Institute of Technology
ML	Machine Learning
NHTSA	National Highway Traffic Safety Administration
NLP	Natural Language Processing
NCAI	National Centre of Artificial Intelligence
NUST	National University of Science and Technology
NCRA	National Centre of Robotics and Automation
PECA	Prevention of Electronic Crimes Act
RAIs	Robots and Artificial Intelligence
RAS	Robotics and Autonomous Systems
SECP	Security and Exchange Commission of Pakistan
UK	United Kingdom
UNGA	United Nations General Assembly
USA	United States of America

ABSTRACT

In light of the expansive growth and advancements in AI and robotics globally, the research casts a critical eye on the existing regulatory framework in Pakistan, probing its readiness and responsiveness to the emerging legal, ethical, and security challenges presented by AI-based robotics in the automobile industry. *Chapter one* lays a robust foundation, detailing the expansive scope and latest breakthroughs in AI and robotics. It delves into the intelligent automation systems, their benefits, and the accompanying legal considerations. This chapter also provides a comprehensive understanding of the relevant terms and technologies. The discussion deepens in the *second chapter* with a comparative legal analysis of autonomous vehicles and their security, focusing on the United States. The chapter examines historical contexts, scrutinizing manufacturer, shared, and cybersecurity liability issues, while highlighting security concerns, technological innovations and the corresponding legislation. Summarily, this chapter incorporates relevant case studies, offering a comparative analysis with Pakistan, thereby underlining the implications and potential pathways for Pakistan. The research then narrows its focus in the *third chapter* to present a critical examination of Pakistani laws relevant to AI-based robotics in the automobile sector. It evaluates the current status of autonomous vehicles in Pakistan, civil and criminal liability issues, security, and privacy concerns, and the broader regulatory challenges and presenting an array of opportunities that the country faces in this dynamic technological domain. The *fourth chapter* enriches the analysis by incorporating ethical considerations and public feedback on AI-driven vehicles in Pakistan, underlined by a thorough survey analysis. The exploration of various ethical theories related to robotics and AI and the assessment of international survey findings provide a holistic view, grounding the legal discussion in real-world concerns and perspectives. In conclusion, the research unearths significant insights into the legal framework, challenges, and opportunities concerning AI-based robotics in the automobile industry of Pakistan. It underscores the imperative need for robust legal structures, emphasizing the concomitant ethical considerations, thereby providing a roadmap for informed legal and policy decisions in this dynamic and evolving industry in Pakistan.

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