TERMS AND DEFINITIONS:

1. Anomalies: Deviations or irregularities from the normal or expected behavior.

2. Artificial Intelligence (AI): The simulation of human intelligence processes by machines, typically through computer systems.

3. Bicyclist Safety: The measures and practices aimed at ensuring the safety of individuals riding bicycles.

4. Collisions: Instances of objects, in this context, bicycles, coming into contact with each other or other obstacles.

5. Comprehensive Approaches: Holistic strategies that consider multiple aspects or factors.

6. Convolutional Neural Network (CNN): A type of neural network designed for image recognition and processing, commonly used in computer vision tasks.

7. Data Sources: Various references or origins of information used in the study, such as police reports and hospital records.

8. Deep Learning: A subset of machine learning that involves neural networks with multiple layers (deep neural networks) to learn and make predictions.

9. Fatalities: Deaths resulting from accidents or incidents.

10. Hierarchical Feature Learning: A process where a system learns to recognize complex patterns by analyzing features at different levels of abstraction.

11. Injuries: Harm or damage to the body resulting from accidents or incidents.

12. Intelligent Transportation Systems (ITS): Advanced applications aimed at providing innovative services related to different modes of transportation to improve safety and efficiency.

13. Irregularities: Abnormalities or deviations from the expected patterns.

14. Investment in ITS: Allocating resources, both financial and technological, to the development and implementation of Intelligent Transportation Systems.

15. Literature Review: A comprehensive survey and analysis of existing literature on a particular topic.

16. Machine Learning: A subset of AI that involves the development of algorithms and models that enable machines to learn and make predictions from data.

17. Magnetic Sensors: Devices that detect changes in magnetic fields, often used for various applications, including vehicle detection.

18. Mitigate Accident Risks: Reduce the likelihood or severity of accidents.

19. Model Interpretability: The ability to understand and explain the decisions or predictions made by a machine learning model.

20. Neural Networks: Computing systems inspired by the structure and functioning of the human brain, used in deep learning for processing information.

21. Object Detection: The process of identifying and locating objects within an image or video.

22. Paradigm Shift: A fundamental change in approach or underlying assumptions.

23. Pixel-level Features: Refers to the characteristics or attributes of individual pixels in an image.

24. Policy Frameworks: Structured plans or guidelines set by governments to achieve specific goals, in this case, promoting cycling as a sustainable mode of transportation.

25. Precision: The accuracy or exactness of a measurement or system.

26. Real-time Detection: Identifying and responding to events or anomalies as they happen, without delay.

27. Recurring Congestion: Regular or repeated traffic jams or blockages in the flow of vehicles.

28. Scalable: Capable of handling a growing amount of work, usually by expanding resources.

29. Scalability: The capability of a system to handle growth or expansion, often in terms of computational resources or workload.

30. Security Surveillance: Monitoring and recording activities for the purpose of safety and security.

31. Streamlines: Simplifies or makes a process more efficient.

32. Supervised Learning: A machine learning approach where the model is trained on labeled data, learning from examples with known outcomes.

33. Surface Transportation System: The network of roads, highways, and other infrastructure that supports ground transportation.

34. Swift Detection: Quick and efficient identification or recognition.

35. Theoretical Foundation: The underlying principles or concepts that form the basis of a theory or approach.

36. Thermal Cameras: Cameras that capture infrared radiation to create images, useful for detecting heat signatures.

37. Traffic Flow Optimization: Improving the movement of vehicles on roads to minimize congestion and enhance efficiency.

38. Transformative Potential: The capacity to bring about significant changes or advancements.

39. Unsupervised Learning: A machine learning approach where the model learns from unlabeled data, identifying patterns and structures on its own.

40. Versatility: The ability to adapt to different tasks or situations.