***Air Quality Monitoring Innovations:***

1.***Machine Learning-Based AQM:***

Implementing machine learning algorithms to dynamically adjust AQM parameters based on real-time network conditions and traffic patterns.

2.***Adaptive AQM for IoT:***

Developing an AQM system tailored for the unique challenges posed by Internet of Things (IoT) devices, which often have diverse traffic patterns and resource constraints.

3.***Blockchain-Powered AQM:***

Exploring the integration of blockchain technology to create a decentralized AQM system, enhancing security and trust in managing network congestion.

4.***QoS-Aware AQM***:

Designing AQM algorithms that prioritize different types of traffic (e.g., video streaming, VoIP) based on their Quality of Service (QoS) requirements.

5.***Multi-Objective Optimization for AQM:***

Creating AQM systems that consider multiple objectives, such as minimizing latency, maximizing throughput, and ensuring fairness among different flows.

AI-Enhanced Traffic

6.***Prediction for AQM:***

Leveraging AI algorithms to predict future network traffic patterns and proactively adjust AQM parameters to prevent congestion.

Edge

7.***Computing-Integrated AQM:***

Developing AQM solutions that are optimized for edge computing environments, where low latency and high reliability are critical.

8.***Privacy-Preserving AQM:***

Ensuring that AQM algorithms can operate effectively while preserving the privacy of user data, especially in sensitive applications like healthcare or finance.

Quantum

9.***Computing-Enhanced AQM:***

Investigating the potential of quantum computing to optimize AQM algorithms, potentially enabling more efficient congestion control in quantum network environments.

10.***AQM for 5G and Beyond:***

\*Tailoring AQM techniques to meet the specific requirements and challenges of advanced network technologies like 5G and future-generation networks.