

SUSTAINABLE SMART CITY ASSISTANT USING IBM GRANITE LLM

- ENCHANING URBAN LIVING WITH AI AND SUSTAINABILITY

- TEAM MEMBERS

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SMARTBRIDGE
Let's Bridge the Gap

INTRODUCTION

- - Overview of smart cities
- - The growing need for sustainable urban development
- - Role of AI in transforming city operations
- - IBM Granite LLM as the core AI engine

WHAT IS A SUSTAINABLE SMART CITY?

- - Integration of technology to improve efficiency and quality of life
- - Sustainability goals: Net-zero, renewable energy, waste reduction
- - Examples: Smart grids, public transport, air quality monitoring



IBM GRANITE LLM OVERVIEW

- - Enterprise-grade Large Language Models by IBM
- - Open, trustworthy, and adaptable
- - Trained on diverse data for reliability and accuracy
- - Supports text, code, and other modalities

FEATURES OF THE SMART CITY ASSISTANT

- - Natural language interaction with citizens and city staff
- - Real-time data analysis (traffic, pollution, energy)
- - Automated responses to service requests
- - Personalized sustainability tips for residents



ARCHITECTURE OVERVIEW

- - User Input → Granite LLM → Backend Data Sources (IoT, weather, city database) → Output
- - APIs for integration
- - Cloud-native deployment (e.g., IBM Watsonx)

USE CASES

- 1. Smart Waste Management: Optimize collection routes
- 2. Public Transport Alerts: Real-time summaries
- 3. Energy Tips: Consumption analysis
- 4. Citizen Engagement: Reporting and feedback

DEMO WALK THROUGH

- - Chat interface with LLM
- - Example: “Why is traffic heavy today in Sector 12?”
- - LLM provides cause + alternate route suggestions
- - Backend integration with live data

RESPONSIBLE AI AND TRUST

- - Bias mitigation and transparency
- - IBM Granite ensures compliance and data safety
- - Secure, ethical AI usage

BENEFITS

- - Improved citizen satisfaction
- - Data-driven policy-making
- - Reduced operational costs
- - Achieving sustainability goals faster

FUTURE ROADMAP

- - Multilingual support
- - Edge device integration
- - Predictive modeling (e.g., urban heat islands)
- - Government collaborations

CONCLUSION

- The Sustainable Smart City Assistant powered by IBM Granite LLM offers a transformative solution for modern urban challenges. By combining AI-powered language understanding with real-time data, cities can become more efficient, responsive, and eco-friendly.
- IBM Granite LLM ensures trustworthy, scalable, and responsible AI deployment—essential for sensitive public systems. This assistant helps drive citizen engagement, energy efficiency, and data-informed governance, paving the way for smarter and greener cities. Together, AI and sustainability can shape the future of urban living.