



AI SEMINAR PROCEEDINGS

Vientiane, Lao PDR - 26 March 2024



UN-HABITAT

Proceedings of the
UN-Habitat AI seminar
under the theme of
**“AI in Urban Development:
Transforming Cities for a Sustainable Future”**

organized by
**United Nations Human Settlements Programme
(UN-HABITAT)**

26 March 2024
Vientiane, Lao PDR



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1. BACKGROUND

Artificial Intelligence (AI) is rapidly transforming the global landscape, offering innovative solutions for complex challenges. Recognizing its potential, UN-Habitat Lao PDR hosted an AI informational session to explore AI's potential role in urban development and smart city planning, while emphasizing the responsible use of AI in line with data privacy standards.

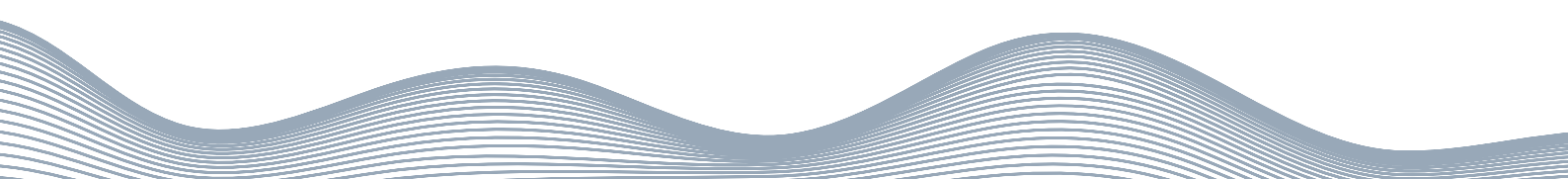
2. OBJECTIVES

The event focused on sensitizing stakeholders to the potential uses of AI through its main theme of “AI in Urban Development: Transforming Cities for a Sustainable Future”. The event said “sab-AI-dee” to artificial intelligence and gave an overview of how it works and how it can be used for development.

The objectives of the seminar were:

- 1. Sensitize and inform stakeholders on AI and LLMs such as OpenAI's ChatGPT.**
- 2. Encourage collaborative approaches for sustainable urban development through AI.**
- 3. Explore AI's role in urban management and smart city development.**
- 4. Advocate for ethical AI use, aligning with data privacy and ethical standards.**

The event had the following impacts:

- Improved understanding and collaboration among urban stakeholders in Lao PDR regarding AI.**
 - Identified innovative AI solutions for urban challenges.**
 - Increased collaboration and coordination among urban stakeholders in Lao PDR.**
- 

This AI Seminar organized by UN-Habitat Lao PDR was a vital initiative to integrate Artificial Intelligence into urban development. The discussions and collaborations from this event contributed valuable insights and practical strategies for leveraging technology in urban development, underscoring UN-Habitat's commitment to innovative and sustainable urban solutions in Lao PDR.

3. PARTICIPANTS

Government bodies:



University of Laos:



UN Agencies:



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4. TIMETABLE

#	Time	Title	Presenter
1	13:50 - 14:00	Welcoming	UN-Habitat
2	14:00 - 14:05	Opening Remarks	Mr. Nalogxay Myvapidith, Deputy Director General, DHUP, MPWT Dr. Avi Sarkar, Head of UN-Habitat Lao PDR
3	14:05 - 14:35	Theoretical Foundations of (Generative) AI	Mr. Rhys Evans
4	14:35 - 14:50	Coffee Break	---
5	14:50 - 15:10	Generative AI for Urban Development	Mr. Rhys Evans
6	15:10 - 15:30	AI for Smart Cities	Mr. Jun Yang Mr. Rhys Evans
7	15:50 - 15:55	Q&A Session	---
8	15:55 - 16:00	Closing Remarks	UN-Habitat



5. KEY TAKEAWAYS

5.1 Theoretical Foundations

The presentation provided a concise yet comprehensive overview of the critical components that form the backbone of artificial intelligence (AI), emphasizing their relevance to both the field at large and specific applications in urban development.

Data Science and Machine Learning: Data science's role is to uncover insights from data. It also sets the groundwork for machine learning, where algorithms learn from data to make informed decisions. This synergy is fundamental to AI's ability to adapt and improve and showcases the importance of data-driven insights in creating intelligent systems.

Large Language Models (LLMs): Highlighted through the development of models like OpenAI's GPT series, LLMs have revolutionized natural language processing. Their ability to generate human-like text and understand context demonstrates AI's growing proficiency in mimicking human communication,

making them instrumental in automating content creation and enhancing user interfaces.

Neural Networks: The structure and function of neural networks, inspired by the human brain, enable deep learning and are crucial for AI's pattern recognition, prediction, and learning capabilities. These networks form the structural framework that allows AI to process complex data sets, supporting a wide range of applications from image recognition to sophisticated generative tasks.

5.2 Generative AI for Urban Development

The presentation provided an outline of the transformative role generative AI technologies could play in shaping the future of urban planning and development. This segment highlighted how generative AI not only fosters innovation but also significantly enhances productivity and efficiency across various urban development domains.

Productivity and Innovation: Generative AI is poised to significantly enhance productivity in urban planning processes by automating and optimizing tasks that traditionally require extensive manual effort. Its ability to generate creative solutions and innovate within the constraints of urban development parameters showcases its potential as a tool for both practical and imaginative urban planning endeavours.





3D Modeling and Simulation: A highlighted application of generative AI in urban development is in 3D modelling and simulation. These tools, such as Sketchup, Delve by Sidewalk Labs, and ARCHITEChTURES, offer unprecedented capabilities for visualizing urban layouts, simulating environmental impacts, and planning infrastructure projects with a high degree of accuracy and detail, enabling more informed decision-making.

Broad Applications in Urban Development: Generative AI's applications extend beyond 3D modelling to include various aspects of urban planning and management. From intelligent transportation systems that optimize traffic flow to smart city services that improve residents' quality of life, generative AI technologies are integral to developing responsive, efficient, and sustainable urban environments.

5.3 AI for Smart Cities

The presentation discussed how a smart city can effectively connect information networks to break down the boundaries between information and resources to form a unified, shared urban resource system. Smart cities use technologies such as AI to intelligently process massive amounts of information and make intelligent decisions. Smart cities encompass multiple aspects, including smart transportation, smart healthcare, smart buildings, and smart city services, among others, to improve urban efficiency and livability.

5.4 Generative AI Demonstration

Throughout the presentation, the potential of generative AI was demonstrated through use-case videos. These videos included text, image, video, and 3D generative AI examples. These examples included videos showcasing OpenAI's ChatGPT, Google's Gemini, Microsoft's CoPilot, Mistral's AI model, OpenAI's Sora, Trimble's Sketchup, ARCHITECHTURES, and Sidewalk Labs' Delve.

Generalist

LLMS

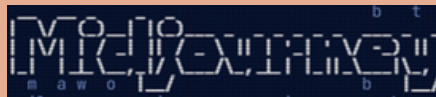


AI



Specialist

IMAGE



VIDEO
SPEECH



Sora

ElevenLabs

3D

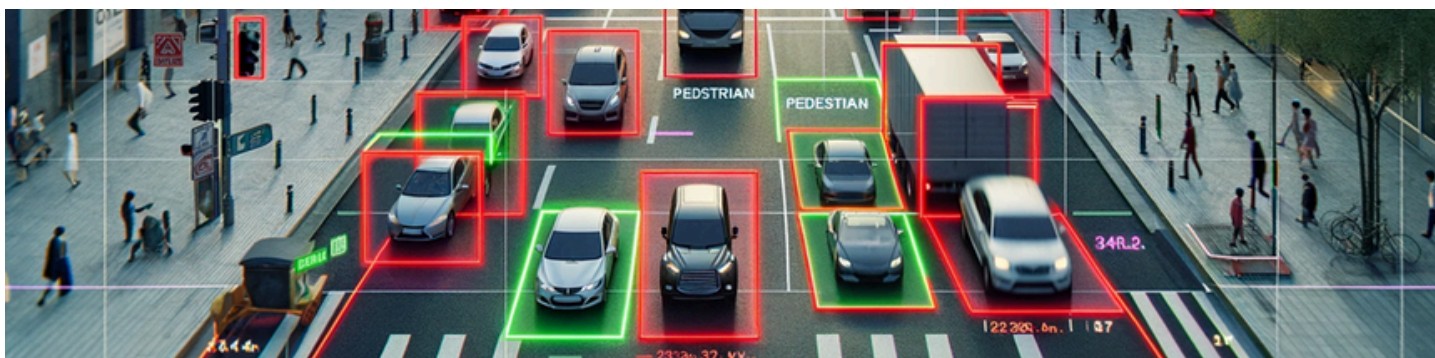


SketchUp



SIDEWALK
LABS
Part of Google

ARCHITECHTURES®



6. DISCUSSION

6.1 Urban Development and Smart Cities

The first discussion centered on Vientiane and its capacity to evolve into a smart city. This conversation highlighted Vientiane's role as the capital city, currently hampered by inadequate advanced infrastructure, especially in telecommunications, and deliberated on its transition towards becoming a smart city through the adoption of AI technologies. The conversation also illuminated the distinction between High-Tech and AI within the urban development framework. An example provided was a street monitoring system designed for crime prevention. While both CCTV and AI sensors necessitate infrastructure investment to function, AI potentially offers time-saving advantages through simultaneous data analysis and the reduction of data storage requirements via motion detection and tracking.

The exchange of ideas clearly demonstrated that Vientiane is poised to adopt small-scale and specific AI applications, capitalizing on existing resources to boost efficiency. Initiatives such as traffic control and healthcare services could serve as starting points and gradually lead to comprehensive smart city development.

A substantial portion of the discussion also explored the possible use of Sidewalk Labs' AI for traffic management. Although this AI holds promise for



future applications, its current availability is limited, necessitating patience for further development and subsequent releases of the technology.

The final discussion under this topic was about AI and inclusive urban development, highlighting concerns regarding the oversight of disabled individuals in the design of homes or public spaces by AI specialists. Those involved in the utilization of AI must ensure that the needs of disabled individuals are adequately addressed throughout the design process.



6.2 AI Based on High-Quality Learning Data

A discussion was held on the use of AI in Lao, the local language. Since AI is trained on available data, it currently works best in English and other Western European languages which have a large amount of high-quality data. AI support for the Lao language will be enhanced as the number of high-quality translations between Lao-English languages increases.

This also applies to the potential and reliability of climate hazard and risk predictions in the country. This is because the availability of high-quality data has a direct impact on the accuracy of hazard risk predictions.

6.3 Reliability of AI

The discussion under this topic revolves around the extent to which we can trust the output generated by AI. Trust in AI will develop over time through our experiences in utilizing it. Fact-checking is also consistently recommended to ensure the quality of work produced by AI.

7. OUTPUT STATEMENT

The AI seminar hosted by UN-Habitat Lao PDR focused on the integration of Artificial Intelligence (AI) in urban development and smart city initiatives and served as a critical platform for discussing the transformative role of AI technologies. This event, titled “AI in Urban Development: Transforming Cities for a Sustainable Future,” emphasized the responsible use of AI while exploring its potential in urban planning, smart city development, and ethical considerations, including data privacy. The seminar brought together stakeholders from various sectors in Lao PDR to engage in meaningful dialogues on leveraging AI for sustainable urban solutions, underlining UN-Habitat’s commitment to innovative, efficient, and inclusive urban development. Through presentations, demonstrations, and a Q&A session, participants gained insights into generative AI applications in urban development, the theoretical foundations of AI, and practical strategies for employing AI to address urban challenges effectively.





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