PMAC PRINCE MAHIDOL AWARD CONFERENCE 2024

PS 2.5

UNLOCKING SYNERGIES: HEALTH TECH AND AI AT THE CLIMATE-HEALTH FRONTIER

| BACKGROUND

Artificial intelligence (AI) is revolutionizing health, education, and industry, and has the potential to accelerate humanity's response to climate change. AI technologies are increasingly used to predict, analyze, and respond to environmental pollution, extreme weather events, natural disasters, biodiversity impacts, and water scarcity. However, technological advancements often fail to reach the communities most in need, with algorithmic biases potentially exacerbating existing inequities. The Global Partnership on AI highlights that the least-resourced actors, particularly in the Global South, are most vulnerable to climate impacts and digital transformation power shifts, necessitating responsible AI development and deployment. AI applications in climate mitigation, adaptation, and resilience, such as reducing emissions, improving hazard projections, and supporting climate research, are promising but require substantial support, including capital investments, informed decision-makers, and trained practitioners.

The relationship between climate and health is complex, with climate change aggravating over 200 diseases and impacting health outcomes through extreme weather events, heat stress, air and water quality issues, and more. AI can enhance societal resilience to climate change by improving public health models, disaster response, and infrastructure targeting. However, integrating AI with climate science and health expertise is challenging and requires comprehensive, integrated knowledge. Moreover, the energy consumption of AI technologies poses additional challenges. Reports indicate significant increases in greenhouse gas emissions from data centers, with AI-related queries consuming more electricity than traditional internet uses. Addressing these issues requires targeted interventions and better data to set priorities and implement effective solutions.

| OBJECTIVES

- **Explore Synergies:** To explore the synergies between health technologies, AI, and climate resilience, focusing on how these intersections can address global health and climate challenges.
- **Highlight Applications**: To highlight practical applications of AI in mitigating, adapting to, and building resilience against climate-related health risks.
- **Identify Barriers and Solutions**: To identify the barriers and solutions to the equitable deployment of AI and health tech solutions, especially in low- and middle-income countries (LMICs).
- **Promote Collaboration**: To promote interdisciplinary collaboration among stakeholders from the health, technology, and climate sectors.
- **Encourage Innovation**: To encourage innovative approaches and investment in AI and health tech that address both climate change and health inequities.

Panelist

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Ph.D. in Ecology from the University of Washington Graduate School, College of Forest Resources, USA, and subsequently participated in the Chennai-Sakhalin International Biodiversity Project at the University of Washington and the University of Hokkaido, and later as an overseas researcher from the Ministry of Education in Kenya. After that he started his career at the Center for Physiological Ecology, and after working at New York University and Saga University School of Medicine, he became a professor at the Institute of Tropical Medicine, Nagasaki University in 2006. His main research activities include studies of Plasmodium falciparum and dengue virus vectors, epidemiological studies on human subjects for mosquito nets and other control measures, and studies on the effects of climate change. He has conducted these studies while living in the field, mainly in Africa, since the 1990s. In recent years, he has also conducted research on malaria epidemic forecasting and projects to implement warning systems in southern Africa.