

Global AI Challenge for Building E&M Facilities

AI Competition

HKBU students win top awards at the Global AI Challenge for Building E&M Facilities – AI Competition

The Global AI Challenge for Building E&M Facilities is a global event to boost AI development and applications in the building services industry through a Technical Conference and an AI Competition. It is organised by the Guangdong Provincial Association for Science and Technology and the Electrical and Mechanical Services Department of the Government of the HKSAR. Five teams of HKBU students from various disciplines have won top awards in the AI Competition and one of them has been shortlisted to receive the Grand Prize Award.

The AI Competition is open to participants around the globe to develop AI models to predict the cooling demand of commercial buildings. Students from Computer Sciences, Finance and Decision Sciences, Geography, and Physics formed multi-disciplinary teams and collaborated to improve the energy efficiency of buildings and highlight the role of AI technology in smart city development.

The winners of the Grand Prize include Li Qingyun (China Studies - Geography), Yin Yiao (Data Analytics and Artificial Intelligence), Zhou Shucheng (Information Technology Management), and Min Rui (Green Technology (Energy)). The other four winning teams for the Gold, Silver and Bronze prizes include the following students:

Lam Hin Shun Thomas from Geography and Asian Energy Studies Centre;

Ou Weijin, Hu Liu Ruochen, Xie Maokai, Zheng Boyu from Green Technology (Energy);

Mak Lok Yi, Tang Zhiye from Data Analytics and Artificial Intelligence;

Yang Xu from Information Technology Management;

So Tin King from Finance and Decision Sciences; and,

Fong Long Lon Elvis from FinTech and Financial Analytics.

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Students expressed gratitude to Prof. Samson Tai, Professor of Practice at the Department of Finance and Decision Sciences, former Chief Technology Officer for IBM Hong Kong, for his valuable guidance. After holding training workshops and tutorials, Prof. Tai encouraged students to form interdisciplinary teams and guided them throughout the Competition. As one of the supporting organizations in the event, the Asian Energy Studies Centre also took a leading role to coordinate BU students in the AI Competition and shared insights on “Experience Sharing on Constructing Metadata Schema for Smart Building Applications” at the Technical Conference.

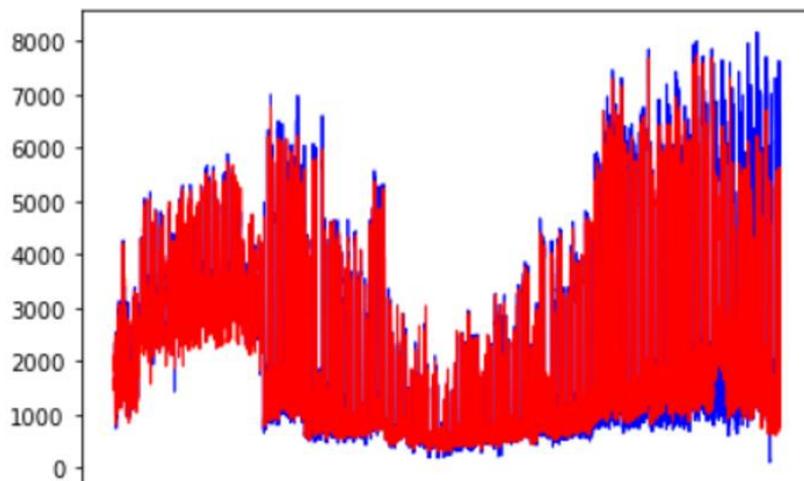
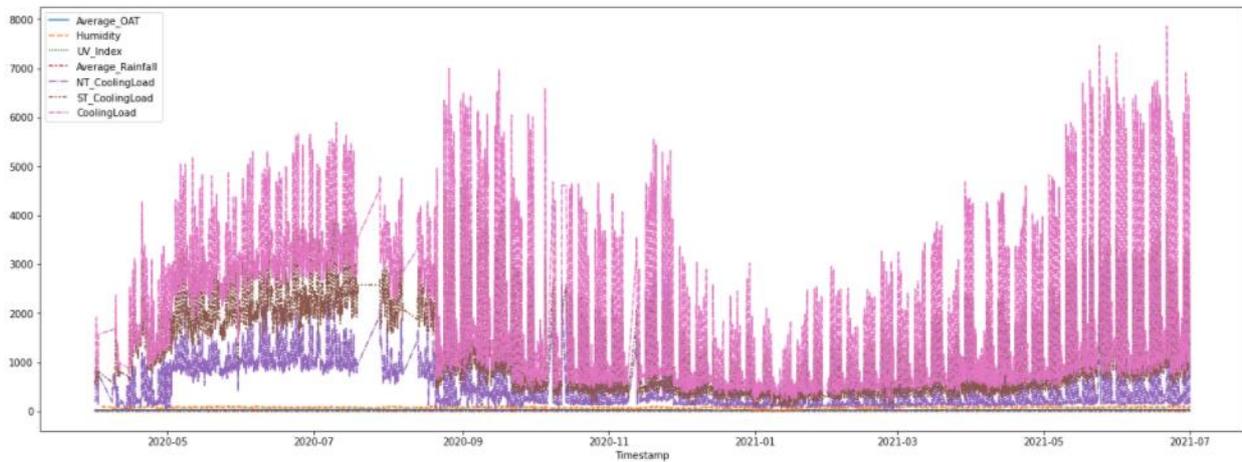
Given this was students’ first-ever experience joining a Global AI Competition, they found it challenging to develop accurate AI models and as well as cooling demand predictions. Eventually, they strived to accomplish innovative energy-saving solutions and the sense of fulfilment justified their toil.



Prof. Samson Tai, Professor of Practice from the Department of Finance and Decision Sciences (left) and Dr. Daphne Mah, Associate Professor from the Department of Geography and Director of Asian Energy Studies Centre (right) at an internal student training workshop.

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The Grand Prize winners used AI technology to process data and develop a Cooling Load Prediction model that can accurately predict the next 3 months of the hourly cooling load of the commercial complex (top). The graph (bottom) indicates the original data (blue) and their predicted results of the cooling load of the building (red).

The AI Competition requires each team to build their semantic AI model and produce a pre-recorded presentation video. This international challenge competition aims at promoting the AI technologies and semantic AI platforms for building energy conservation and fostering scholars' collaboration in the R&D of smart building technologies. The Awards Ceremony will be held in late-April 2022.

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Participating Units at HKBU (in alphabetical order):



Asian Energy Studies Centre



Department of Computer Science



Department of Finance and Decision Sciences



Department of Geography



Department of Physics