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# Breakthrough in AI Medicine: NTU Wins the Alexander R. Margulis Award for Scientific Excellence

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An NTU research team won the 2023 Alexander R. Margulis Award for Scientific Excellence from the Radiological Society of North America (RSNA) for their development of an AI pancreatic cancer detection tool. *Radiology*, the official journal of RSNA, points out that the study discovered a new route for early pancreatic cancer detection to enable timely treatment, greatly increasing the chance of survival and benefiting millions of patients worldwide.

Pancreatic cancer is the seventh leading cause of cancer deaths in Taiwan, and is expected to become the second leading cause of cancer deaths in the United States by 2030. Pancreatic cancer metastasizes rapidly and has the lowest five-year survival among cancers. Therefore, effective early detection tools are urgently needed.

To address these key clinical obstacles and needs, an interdisciplinary team led by Prof. Weichung Wang at NTU Institute of Applied Mathematical Sciences and Prof. Wei-Chih Liao at the School of Medicine developed the world's first AI computer-aided detection/diagnosis tool for pancreatic cancer. When tested with nationwide real-world clinical data, the diagnostic accuracy exceeded 90%. Whereas radiologists' detection rate for pancreatic cancers smaller than 2 centimeters is approximately 60%, the tool detected 75% and 86% of such small cancers in the national and internal tests, respectively.

Dr. Po-Ting Chen of NTU Hospital, a first author of this study, concluded that this study takes advantage of advanced AI technology to enable automated detection of pancreatic cancer which can be difficult to diagnose with the naked eye. It improved the diagnosis accuracy and could hasten the diagnosis to provide timely care for patients. More importantly, this study achieved nationwide real-world verification which is rarely seen with medical AI research, providing strong scientific evidence for the correctness and general applicability of the AI model.



NTU researchers Weichung Wang, Tinghui Wu, Po-Ting Chen and Wei-Chih Liao (from left to right) receiving the 2023 Alexander R. Margulis Award for Scientific Excellence from the Radiological Society of North America (photo credit: RSNA website).



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