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Industry Cooperation

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NYCU and AMD Launch Advanced Research Program to Push AI and Next-Generation Semiconductor Breakthroughs



NYCU and AMD jointly announced the launch of the AMD Advanced Research Program on February 3.

Edited by Chance Lai

National Yang Ming Chiao Tung University (NYCU) and Advanced Micro Devices (AMD) have announced the joint establishment of the

The partnership is expected to produce high-impact research showcased at major international conferences and to strengthen strategic

AMD Advanced Research Program, marking a long-term strategic partnership focused on artificial intelligence, high-performance computing, and next-generation semiconductor technologies — fields increasingly central to the global digital economy.

The initiative aims not only to accelerate frontier research but also to cultivate globally competitive talent capable of moving seamlessly between academia and industry, helping address urgent workforce demands in advanced computing.

Tackling the Limits of AI and High-Performance Systems

As AI and high-performance computing systems confront mounting challenges in data movement, bandwidth density, and energy efficiency, the AMD Advanced Research Program is designed to pursue breakthrough solutions at both the hardware and algorithmic levels.

Research priorities include:

leadership in critical areas, including AI acceleration and silicon photonic computing systems.

Deepening Industry–Academia Collaboration

The establishment of the AMD Advanced Research Program underscores NYCU's long-standing commitment to close industry collaboration and its ambition to lead global innovation in AI and semiconductor research.

By partnering with AMD — one of the world's leading technology companies — NYCU is expanding its research capacity in electrical and computer engineering, accelerating the deployment of forward-looking technologies, and reinforcing its role as a major international academic hub.

The program reflects a shared belief that future breakthroughs will emerge from the tight integration of academic inquiry and industrial application—a model increasingly essential for shaping the next era of intelligent computing.

- Energy-efficient AI accelerators and hardware architectures
- Efficiency-driven AI models and algorithms
- Edge–cloud collaborative AI systems
- Silicon photonics and optical I/O technologies
- Heterogeneous integration and advanced packaging
- Sensor–AI co-design for emerging applications in healthcare, 6G communications, and quantum technologies

Together, these directions reflect a systems-level approach to computing — where architecture, software, and application design evolve in tandem to meet next-generation performance and sustainability demands.

A Joint Platform for Global-Impact Research

Supported by AMD and led by NYCU's College of Electrical and Computer Engineering, the program will select distinguished faculty members recognized for research excellence, teaching leadership, and



The AMD Advanced Research Program focuses on developing breakthrough solutions for next-generation computing challenges.

international academic standing. These researchers will conduct frontier research through the **AMD-NYCU Joint Laboratory for AI Computing and Communications**, a platform for sustained collaboration and knowledge exchange.

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