Cancer Centers Launch AI Alliance to Unlock Discoveries and Transform Care

AWS, Deloitte, Microsoft and NVIDIA bring funding and the latest in AI technology and coordination to the alliance.

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Four National Cancer Institute-designated cancer centers — Dana-Farber Cancer Institute, Fred Hutch Cancer Center, Memorial Sloan Kettering Cancer Center, and The Sidney Kimmel Comprehensive Cancer Center and Whiting School of Engineering at Johns Hopkins — have joined forces and secured funding from AI technology leaders AWS, Deloitte, Microsoft and NVIDIA, to create the Cancer AI Alliance (CAIA). The alliance will apply responsible AI to the collective power of the participating cancer centers' data to unlock insights while protecting data security, all to identify more ways to transform cancer research and care.

Fred Hutch Cancer Center, which spearheaded the formation of CAIA and secured its initial funding, will serve as the alliance's coordinating center.

"Collectively, the data held by the nation's leading cancer centers has been an untapped source of new cancer discoveries that has been out of reach. This alliance helps solve the key technical challenges that will enable us to securely use both AI and massive computational power to find these breakthrough insights and save more lives," said Thomas J. Lynch Jr., MD, Fred Hutch president and director and holder of the Raisbeck Endowed Chair.

The alliance will serve as a collaboration center by providing shared infrastructure and shaping industry standards, which will not only shift researchers from solving problems in isolation to solving them together but support greater health outcomes by exposing data trends for rare cancers and small populations that can result in more meaningful and broadly impactful discoveries.

CAIA is supported by more than $40 million in funding and the best and latest AI technology and expertise from AWS, Deloitte, Microsoft, NVIDIA and Slalom to launch the coordination and computation capacity needed to securely bring cancer research and data together at rapid speed using responsible AI.

"AWS is proud to support the Cancer AI Alliance and help deliver on its critical mission of transforming cancer research and care. Together, we will accelerate innovation in cancer

discovery and treatments, deploy generative AI at scale, and leverage the power, agility, and security of cloud computing to revolutionize health and patient outcomes," said Matt Garman, CEO, Amazon Web Services.

"Our collaboration with the Cancer AI Alliance underscores Deloitte's long-standing commitment to help transform the life sciences and healthcare industry," said Jason Girzadas, CEO of Deloitte US. "We are proud to be investing our talent, resources, and innovative AI, cyber security and health equity technologies to help enhance cancer research, improve treatments and address one of the most pressing health challenges of our time."

"We are at a breakthrough moment for finding cancer cures thanks to rapid advancement in AI. With leading AI capabilities, diverse data types and standards, and modern cloud infrastructure in place, thoughtful collaboration across leading cancer research centers can help accelerate progress. The Cancer AI Alliance will be integral in this lifesaving work, and we are proud to be supporters," said Juan Lavista Ferres, Corporate Vice President & Chief Data Scientist, Microsoft.

"The convergence of AI, multimodal health care data and federated learning will usher in a new era for cancer research," said Jensen Huang, founder and CEO of NVIDIA. "We are delighted to partner with Cancer AI Alliance to help researchers transform cancer care."

Currently, cancer researchers face two challenges to using AI modeling: accessing the computational resources to analyze large volumes of data at speed, and remaining compliant with the regulatory and privacy requirements associated with sharing data from multiple cancer centers.

CAIA will serve an enabling role, providing the computing infrastructure to members of the alliance to process high volumes of cancer data generated during routine cancer care, such as electronic health records, pathology images, medical images and genome sequencing. This data, when paired with AI, could lead to novel insights in tumor biology, treatment resistance, and identification of new therapeutic targets.

All of this will be developed while maintaining data security, privacy and alignment with regulatory and ethical standards. Paired with strict governance, CAIA will use a federated AI learning framework in which each cancer center maintains its independent data and AI models are sent to the data to produce results. Those results are then aggregated across participating members to uncover insights, all without sharing or exposing any of the raw data behind it.

While CAIA is launching with four inaugural cancer center members, four foundational partners and one enabling partner, additional members are expected to be added. The governing committee, comprised of representatives from cancer centers, will determine membership criteria in the months ahead. The alliance's aspirational goal is to support cancer innovation with $1 billion in resources over time.

CAIA is expected to be operating by the end of 2024 and producing its first insights by the end of 2025.

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