In the Lab

## MIT's inaugural chief innovation and strategy officer

[Anantha Chandrakasan will play a pivotal role in advancing President Kornbluth's priorities.](#)

In his new role, Lab MIT chair and Dean of Engineering Anantha Chandrakasan will help develop and implement plans to advance research, education, and innovation in areas that President Kornbluth has identified as her top priorities — such as climate change and sustainability, artificial intelligence, and the life sciences. He will also play a leading role in efforts to secure the resources needed for MIT researchers to pursue bold work in these key areas.

The 2023 IBM Research annual letter

[How IBM's research and development is leading to commercial products and impactful results](#)

Dario Gil — SVP, director of IBM Research, and the Lab's IBM chair — reflects on IBM's technological advances from the prior year including work in quantum computing, AI like watsonx, semiconductors, hybrid cloud, and security. "Foundation models will multiply the
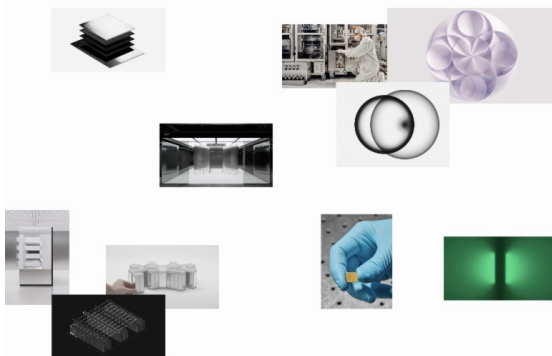
productivity and multi-modal capabilities of AI," Gil highlights.

Reasoning and reliability in AI

[PhD students interning with the MIT-IBM Watson AI Lab look to improve natural language usage.](#)

MIT PhD candidates and Lab interns Athul Paul Jacob, Maohao Shen, Victor Butoi, and Andi Peng harness and tackle natural language processing challenges and applications in innovative ways, from leveraging game theory to allowing vision-language models to reason.

Multiple AI models help robots execute plans more transparently

[A multimodal system uses models trained on language, vision, and action data.](#)

Lab researchers Tommi Jaakkola, Josh Tenenbaum, Leslie Kaelbling, Akash Srivastava, Pulkit Agrawal, and their colleagues developed Compositional Foundation Models for Hierarchical Planning (HiP) framework, which creates detailed plans for robots using the expertise of three different foundation models, helping it execute tasks in households, factories, and construction that require multiple steps.

In the Media

## MIT and IBM find clever AI ways around brute-force math

Researchers across specialties often rely on partial differential equations to model physical systems; however, this is expensive and time consuming. *IEEE Spectrum* reports that a team of Lab researchers, led by Youssef Mroueh, Payel Das, and Steven G. Johnson has developed a technique that uses "physics simulators to help train neural networks to match the output of the high-precision numerical systems," achieving better results than other neural networks.
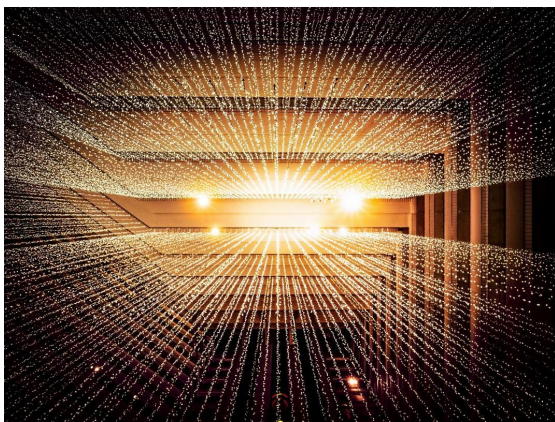
Dario Gil: visionary IBM Chief of Research

Darío Gil — SVP, director of IBM Research, and the Lab's IBM chair — shares insights about the evolution of IBM Research, emphasizes interdisciplinary collaboration and the need for responsible innovation on semiconductors, quantum and AI on the [Remarkable People](#) podcast with Guy Kawasaki.
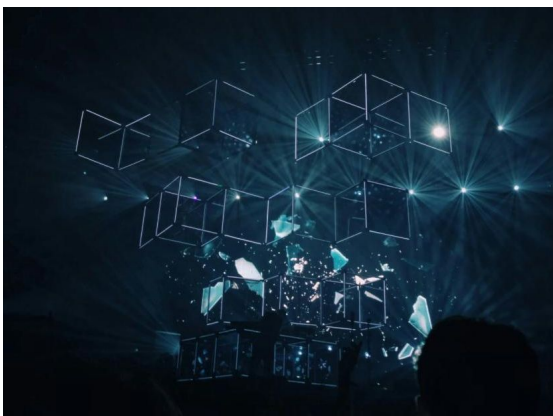
AI far too expensive to replace humans in most jobs

With any powerful technology, it has the potential to impact the workplace and types of jobs within it. *[Fortune](#)* reports on new research led by the Lab's Neil Thompson and Brian C. Goehring of the Lab and IBM's Institute for Business Value on cost and how computer vision usage could impact the economy.

Cohere For AI presents: Jacob Andreas

In a fireside chat, Lab researcher Jacob Andreas speaks with [Cohere For AI](#) about his career path and his work with large language models — exploring how well they understand language and are able to reason.

Event Recordings

[MIT Shaping the Future of Work Initiative Launch Event](#)
Policymakers, practitioners and scholars explore key issues for the future of work: What role can worker representatives play in the direction of technology? How can AI be used for social good? What type of work do we want in the future?

Lab Highlights

Lab researcher Connor Coley was named a [Samsung AI Researcher of the Year Awardee](#) in late 2023. "He has pushed the boundaries of molecular/material design using advanced AI technologies and also along the way made contributions to AI itself. He has received many outstanding prizes and still fairly early in career."

Lab researchers Arvind Satyanarayan, Jacob Andreas, and Antonio Torralba are awarded [2024 Sloan Research Fellowships.](#)

Dario Gil — SVP, director of IBM Research, and the Lab's IBM chair — was elected to the [National Academy of Engineering for 2024](#) "for advancement and practical use of artificial intelligence and quantum computing in industry and society."

Lab researcher Leslie Kaelbling will present an [invited talk at AAAI](#) on "The Role of Rationality in Modern AI."

Lab researcher Caroline Uhler received a [National Institutes of Health New Innovator Award](#) last fall.

Online Learning

[Artificial Intelligence: Implications for Business Strategy](#)
A joint MIT CSAIL and MIT Sloan School of Management Course begins
March 6.

[Making AI Work: Machine Intelligence for Business and Society](#)
A joint MIT Sloan & Schwarzman College of Computing Executive and Professional Course begins
March 13.

[Unsupervised Machine Learning: Unlocking the Potential of Data](#)
A joint MIT Sloan & Schwarzman College of Computing Executive and Professional Course begins
March 20.

[Machine Learning in Business](#)
A joint MIT CSAIL and the MIT Sloan School of Management Course begins
April 3.