Dario Gil
Director of IBM Research

The Future of AI and Quantum Computing

Friday, January 25, 2019
11:00 a.m. - Noon
RAWL 1062

The recent extraordinary progress in AI has been enabled by modern advancements in computing. Algorithmic ideas available for decades have been brought to life thanks to Moore's law and innovations in microprocessor and computing architectures. As Moore's Law slows and data volumes explode, we can expect to see new innovations emerge that will allow rapid progress to continue. This presentation will cover today's state-of-the art computing for AI, as well as a roadmap of algorithmic and hardware innovations that will lead us into the decades to come. Quantum computing is another game-changing approach to computation. Building upon decades of foundational research, we can now exploit the laws of quantum mechanics to provide a potential "quantum advantage" in certain calculations that conventional computers cannot manage alone. IBM has produced the world's first quantum computers accessible via the cloud. A community of more than 100,000 users has performed in excess of six million experiments with these systems, generating more than 130 external research papers. After an overview of key concepts, this presentation will review how IBM's superconducting qubit implementation and Qiskit software framework is enabling researchers, developers and industrial partners worldwide to explore this new technology.

Dr. Dario Gil is the Director of IBM Research, one of the world's largest and most influential corporate research labs. The research division of IBM is a global organization with more than 3,000 researchers across 12 laboratories and 21 locations devoted to advancing the frontiers of information technology. He is the 12th Director in its 74 year history. Prior to his current position, Dr. Gil was the Chief Operating Officer of IBM Research and the Vice President of AI and Quantum Computing, areas in which he continues to have broad responsibilities across IBM. Under his leadership, IBM was the first company in the world to build programmable quantum computers and make them universally available through the cloud. A passionate advocate of collaborative research models, he co-chairs the MIT-IBM Watson AI Lab, a pioneering industrial - academic laboratory with a portfolio of more than 50 projects focused on advancing fundamental AI research to the broad benefit of industry and society. Dr. Gil received his Ph.D. in Electrical Engineering and Computer Science from MIT.

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