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ICFO Colloquium Series: Why machine learning may be a great application for quantum computers after all

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12:00 to 13:00
Auditorium

ABSTRACT:
The discipline of Quantum Machine Learning has grown into a popular subfield of quantum computing in the past years, but finds itself at a crossroads. The claim that trainable quantu circuits will outperform neural networks is increasingly under scrutiny, and known speedup for learning tasks fail to translate into practical applications. Even worse, we don't seem a y closer to understanding why quantum algorithms could potentially be useful for AI. In this talk I want to give an overview of the status quo of Quantum Machine Learning, but al o advocate for a change in perspective: I will motivate why the core of Shor's fam us algorithm, an ultra-fast implementation of a Fourier Transform, could become a unique nd useful ingredient that unlocks new ways of learning from d

BIO:

Maria leads the quantum machine learning research team at Xanadu, a Toronto-based quantum computing start-up. She co-authored a book as well as many papers on the topic of how quantum computers can help to generalise from data, and is one of the original developers of the PennyLane software framework for quantum differentiable programming. Maria received her PhD degree in physics from the University of KwaZulu-Natal in South Africa in 2017, but also holds a postgraduate degree in political science and still spends some of her time on the intersection of machine learning and social sciences research.

Hosted by: Prof. Dr. Antonio Acin