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## **INVITED TALK: Better than classical? The subtle art of benchmarking quantum models**

*Monday, November 20, 2023 10:00 AM (45 minutes)*

Abstract: There is no shortage of quantum machine learning papers observing that a particular quantum model “beats its classical counterparts on real-world datasets”. However, the subtlety of choices made in benchmark experiments, the small scale of the models and data, as well as narratives influenced by the commercialisation of quantum technologies carry the danger of a strong positivity bias. To judge the true potential of prominent ideas in quantum machine learning we are conducting one of the first large-scale meta-studies that systematically tests 12 popular supervised quantum models at scale using the PennyLane software framework. This talk gives a sneak peek of some surprising preliminary results, and reveals the technical and conceptual difficulty of robust benchmarking, a skill which deserves more attention in the quantum applications literature.

**Presenter:** Dr KILLORAN, Nathan (Xanadu)