**Quantum machine learning**

Bibliografía:

[2311.08990](https://arxiv.org/pdf/2311.08990)

[Quantum Machine Learning Fundamentals: Quantum Machine Learning Frameworks and Libraries](https://gpttutorpro.com/quantum-machine-learning-fundamentals-quantum-machine-learning-frameworks-and-libraries/)

[Diseño cuántico de TensorFlow  |  TensorFlow Quantum](https://www.tensorflow.org/quantum/design?hl=es)

[QANTLabs/QMTLib: QMTLib is a Python library designed for training and evaluating quantum and hybrid quantum-classical machine learning models. It integrates with popular quantum computing frameworks such as Qiskit, Amazon Braket, and Cirq, enabling the development of quantum-enhanced machine learning algorithms.](https://github.com/QANTLabs/QMTLib)

[qiskit-community/qiskit-machine-learning: Quantum Machine Learning](https://github.com/qiskit-community/qiskit-machine-learning/tree/main)

**Brainstorming**

**Quantum Data Structures**

* Quantum states, density matrices, and circuits.
* Encoders for classical data into quantum states (e.g., amplitude encoding, angle encoding).

**Quantum Machine Learning Algorithms**

* **Supervised Learning**: Quantum Neural Networks (QNN).

**Optimization Techniques**

* Implement quantum optimization algorithms: Quantum Approximate Optimization Algorithm (QAOA).

**Integration with Classical ML**

* Allow seamless integration with libraries like TensorFlow or PyTorch for hybrid quantum-classical workflows.