# Quantum Computing for Tomographic Image Reconstruction

(QAMP 23' #27, 6th June 2023)

Since our last checkpoint, we've made substantial strides. First, we replicated a classical algorithm through a mini UNet Segmentation model, providing valuable insights on UNet's applications. Next, we took steps to enhance the classical model by integrating a quantum-classical hybrid network, leading to a significant boost in model accuracy.
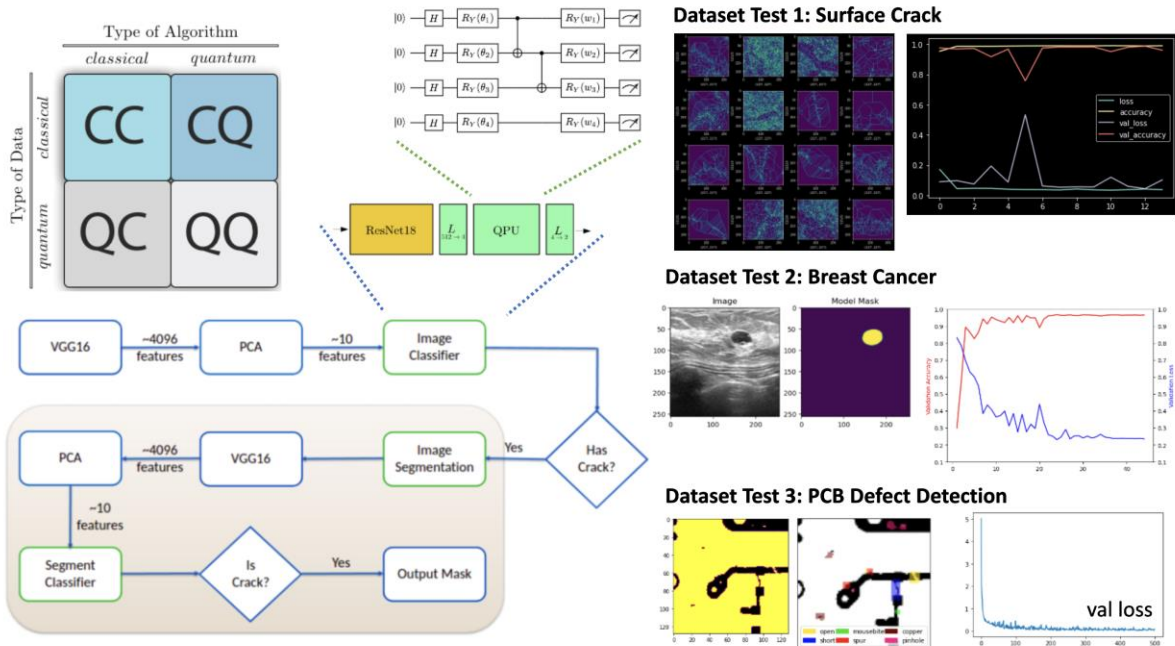
In the next phase of our project, we are focusing on:

1. **Benchmarking:** Comparing the performance of our classical deep learning model and its quantum hybrid variant. This will help us gauge the impact of quantum computing in enhancing the model's efficiency.
2. **Package Development:** Developing a tool to automate the benchmarking process, improving the efficiency and reliability of our testing procedures.
3. **Quantum Image Processing Review:** Deep diving into existing quantum image processing methodologies such as QCNNs, QPCA, Quantum Kernel Learning, and Quantum Transfer Learning. This will expand our knowledge base and inform our model development process.