

LoCo Quantum

**Our AI-Quantum algorithm: Harnessing
quantum computing through a low-
code, LLM-enabled platform.**



Solution: a low-code quantum algorithm platform

Build and run quantum algorithms without expertise

Customize Algorithms

AI assisted algo. design

AI assisted Optimization

Cheap and fast validation

Run on any quantum hardware

Download codes for further development

The interface is a web-based platform for building and running quantum algorithms. It features a dark sidebar on the left with icons for home, notifications, chat, document, bookmark, and settings. The main content area is divided into several sections:

- Choose application and task:** A section with radio buttons for Finance, Chemistry, Material, and Machine learning. Under Finance, there are sub-options for Price forecasting, portfolio optimization, and risk analysis. An "Ask AI" button is present.
- Choose algorithm:** A dropdown menu showing "GPT QAOA" with a list of other algorithms below it: "GPT QAOA", "SQD", and "QLSTM".
- Customize algorithm:** Two input fields for "Number of qubits" (set to 10) and "Number of layers" (set to 15). A blue button labeled "Optimizing with AI" is at the bottom.
- Choose/upload datasets:** A section with a "Datasets" dropdown menu showing "dataset 1". Below it are "dataset 1" and "dataset 2" buttons. An "upload" button and a "your own dataset" input field are at the bottom.
- Choose from our hardware digital twins:** A section with three laptop icons representing "Twin 1", "Twin 2", and "Twin 3". "Twin 1" is selected. A blue "Run" button is at the bottom.
- Run on real quantum computers or download codes:** A section with a "Quantum Computer" dropdown menu showing "IBM QPU". A blue button labeled "Download codes" is to the right.

Callouts from the surrounding text boxes point to specific elements in the interface:

- "Customize Algorithms" points to the "Choose application and task" section.
- "AI assisted algo. design" points to the "Ask AI" button.
- "AI assisted Optimization" points to the "Optimizing with AI" button.
- "Cheap and fast validation" points to the "Choose from our hardware digital twins" section.
- "Run on any quantum hardware" points to the "Quantum Computer" dropdown menu.
- "Download codes for further development" points to the "Download codes" button.



Dashboard



Risk Analysis



Simulations



Portfolio Optimization



Settings

Quantum Status

Processing Power



20 Qubits Active



Risk Manager
Quantum-Enhanced

Portfolio Optimization

Quantum-powered portfolio optimization and rebalancing



Select Portfolio

Demo Portfolio



Optimization Settings

Objective

Maximize Sharpe Ratio



Risk Tolerance

Moderate



Time Horizon

1 Year



Quantum Processing

Enabled



Run Optimization



Start Quantum Optimization

Expected Runtime: 2-5 seconds
Quantum Speedup: ~800x faster



Optimization Constraints

Position Limits

Max Position Weight (%)



25%

Min Position Weight (%)



0%

Sector Limits

Max Sector Exposure (%)



30%

Min Sector Exposure (%)



0%

Trading Limits

Max Turnover (%)



20%

Min Turnover (%)



0%

Advanced Options



ESG Screening



Currency Hedging



Tax Optimization



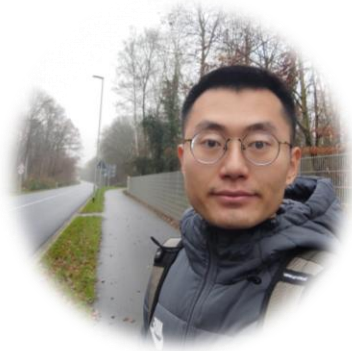
Liquidity Filter

```
INFO: 127.0.0.1:52793 - "GET /api/portfolio/ HTTP/1.1" 200 OK
INFO: 127.0.0.1:52794 - "GET /api/portfolio/db-list HTTP/1.1" 200 OK
```

Founding Team

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PhD candidate at
Forschungszentrum Jülich
Area of expertise: Quantum
algorithm & Hardware
design and control

Zhuo Cao

Co-founder & CTO
AI Core Algorithm



Post doc at FZJ
Area of expertise:
explainable & generative AI
Work experience:
ML6: machine learning internship
on smart glasses

Ran Xue

Co-founder & CSO
Quantum Algo & Hardware



PhD candidate at RWTH Aachen
Area of expertise:
semiconductor quantum device
& electron spin-qubit
Work experience: PSI, imec

THANK YOU

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