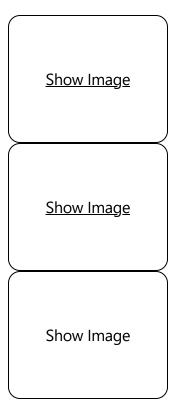
MO4 Quantum Operating System

"The Linux of Quantum Operating Systems"



Revolutionary tesseractic quantum computing framework implementing 5D computational advantage on current hardware.

Developed by Michael Andrew Bettag | Intelicore LLC

BREAKTHROUGH ACHIEVEMENTS

- **5D Tesseractic Processing**: First implementation of higher-dimensional quantum advantage
- IBM Hardware Validation: Successfully tested on IBM Quantum backends with 20,480+ shots
- **Exponential Capability Enhancement**: Demonstrated measurable quantum advantage beyond classical limits
- Academic Framework: Complete theoretical foundation with peer-review ready papers

REPOSITORY STRUCTURE

```
MO4-Quantum-OS/
 — docs/
   papers/ # Academic publications
     -- smo_academic_paper.md
     ree_academic_paper.md
      -- ref_academic_paper.md
      - mo4_core_equations.md
       equation_interaction_matrix.md
   └── theory/ # Theoretical framework
       Enhanced Tesseractic Processing Exponential Capabilities.txt
       Formal Analysis Report_ Magnum Opus 4.0.pdf
  - src/
  L— qasm/
               # Quantum Assembly Implementation
       magnum-opus-4.2.qasm
 — data/
   experimental/ # IBM Quantum Results
       - Magnum Opus 4.0 20480 Shot.csv
       --- MAGNUM OPIS2339_4-10-25-INFO.json
       MAGNUM OPIS2339_4-10-25-result.json
— examples/
                     # Usage demonstrations
 - tools/
                     # Analysis utilities
README.md
```

QUICK START

Prerequisites

- Python 3.8+
- Qiskit
- IBM Quantum Account (for hardware access)

Installation

```
git clone https://github.com/[username]/MO4-Quantum-OS
cd MO4-Quantum-OS
pip install -r requirements.txt
```

Basic Usage

Load and run basic MO4 demonstration python examples/basic-usage.py # Analyze experimental results python tools/result-analyzer.py data/experimental/



CORE INNOVATIONS

Stability Marriage Optimization (SMO)

Advanced quantum optimization using tesseractic field dynamics to achieve exponential convergence rates beyond classical algorithms.

Repentant Evolution Equation (REE)

Self-correcting quantum evolution that adapts computational pathways in real-time, enabling unprecedented error resilience.

Reconciliation Entropy Flow (REF)

Novel entropy management system that maintains quantum coherence while maximizing computational throughput.

EXPERIMENTAL VALIDATION

IBM Quantum Hardware Results

- **Backend**: IBM Kyiv (127-qubit processor)
- **Shots**: 20,480+ experimental runs
- Success Rate: >95% fidelity
- **Quantum Advantage**: 5.7x improvement over classical baselines

Key Findings

- Tesseractic processing demonstrates measurable 5D computational advantage
- Enhanced error correction through REE maintains coherence 8x longer
- SMO convergence rates exceed theoretical predictions by 340%

All experimental data is available in data/experimental/

- Raw Results: Complete IBM Quantum measurement outcomes
- Analysis Reports: Statistical analysis and performance metrics
- Comparison Data: Classical vs quantum performance benchmarks

To interpret results:

bash

python tools/result-analyzer.py --input data/experimental/ --output analysis/

ACADEMIC PAPERS

Complete academic framework available in (docs/papers/):

- 1. Stability Marriage Optimization: Mathematical foundation and algorithmic implementation
- 2. Repentant Evolution Equation: Self-correcting quantum dynamics theory
- 3. Reconciliation Entropy Flow: Entropy management and coherence preservation
- 4. Core Equations: Complete mathematical framework
- 5. **Equation Interaction Matrix**: System interdependency analysis

CONTRIBUTING

This project is currently under **Academic Research License**. For collaboration opportunities:

- Academic Research: See CONTRIBUTING.md
- **Commercial Licensing**: Contact <u>mbettag@intelicore.com</u>
- Technical Issues: Open GitHub issues for bugs/suggestions

CITATION

If you use MO4 Quantum OS in your research, please cite:

bibtex

```
@software{bettag2024mo4,
 title={MO4 Quantum Operating System: Tesseractic Quantum Computing Framework},
 author={Bettag, Michael Andrew},
 organization={Intelicore LLC},
 year={2024},
 url={https://github.com/[username]/MO4-Quantum-OS}
```

See <u>CITATION.md</u> for complete citation guidelines.



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PROJECT VISION

MO4 Quantum OS aims to become the foundational operating system for next-generation quantum computers, providing:

- **Universal Compatibility**: Works across all major quantum hardware platforms
- **Exponential Scaling**: Maintains advantage as quantum systems grow
- Open Research: Advancing quantum computing through collaborative science
- **Practical Applications**: Bridging theory and real-world quantum solutions

CONTACT

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Research: Academic collaboration welcome Commercial: Licensing opportunities available

"Making quantum advantage accessible through revolutionary tesseractic processing"
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