Quantum Neuromorphic Humanoid: Demo Proposal

# 1. Overview

This document outlines a prototype demo for a Quantum Neuromorphic Humanoid system. The system integrates quantum-inspired spiking neural networks (QS-SNN), neuromorphic memory systems, sensory data fusion, and motor control to simulate human-like cognition and decision-making—executed at super-human speeds.

# 2. System Components

- Sensory Simulation Modules (Vision and Audio inputs)

- Quantum-Inspired Spike Decision Engine

- Short-Term and Long-Term Memory Management with Pruning

- Clustering-based Object Classification

- Motor Control System for Simulated Actions

# 3. Demo Features

• Dummy sensory input simulation for objects and sounds

• Encoding and recall of memory based on contextual inputs

• Probabilistic decision-making engine simulating quantum cognition

• Cluster analysis of object types for classification

• Appropriate motor response generation

# 4. Python Demo Code (Summary)

The following Python code implements the demo simulation of the Quantum Neuromorphic Humanoid:

[See Colab-compatible full code cell below]

# [Summary of Python Demo Code - Full code available separately in Colab]  
- Sensory Input: vision\_input(), audio\_input()  
- Memory System: MemoryManager class for short/long term memory  
- Decision Engine: quantum\_spike\_decision()  
- Motor Response: motor\_response()  
- Clustering: cluster\_objects()  
- Simulation Loop: run\_demo()

# 5. Conclusion

This demo showcases a humanoid-like system capable of fast, context-aware cognition using quantum-neuromorphic principles. The architecture allows further expansion into robotics, cognitive assistants, and intelligent sensing applications.