



FACULTY MENTOR

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PROJECT TITLE

Implementing Quantum Networking Using Light

PROJECT DESCRIPTION

Description: Quantum networks will rely on photons, since they are the only known qubits, compared to spins, ions, transmons, etc. which can be transmitted over long distances at room temperature. Photons at telecommunications wavelengths can propagate through free space and optical fiber, but must be detected with precision and low noise. This project develops a hardware-based approach to detecting single photons and photon pairs. Outcomes will play a crucial role in future entanglement swapping, teleportation, and repeaters for quantum networks.

This project will be in person.

INTERNS NEEDED

3 Students

PREREQUISITES

1. Advanced FPGA expertise (Virtex 7 or Ultrascale or comparable) (essential)
2. Real-time instrument control and programming skills (recommended)
3. Some knowledge of optics (desirable).