Project qi25_01

Project Name: Cryptography in Counterfactual Communication in photonics Setup

Mentors: Muhammad Amad Khan

Detailed Plan: https://github.com/QWorld19/QIntern2025/tree/main/Project%20Plans

Approximate number of Interns: 3

Skill Prerequisite: Prerequisites (Skills, Experience, or Motivation): Basic Knowledge of Quantum Mechanics. Understanding of superposition, quantum measurement, and the no-cloning theorem. Familiarity with quantum two-level systems (qubits) and linear optics. Motivation to Learn and Explore Quantum Communication. Strong interest in quantum cryptography and counterfactual communication concepts. Curiosity-driven mindset, open to exploring advanced ideas like interaction-free measurements and quantum Zeno effect. Programming Skills (Beginner to Intermediate). Basic experience in Python programming is preferred. Familiarity with or willingness to learn quantum simulation libraries (e.g., Qiskit, Strawberry Fields, QuTiP). Willingness to Read and Analyze Research Papers. Ability to engage with scientific literature and extract meaningful insights. Willingness to study the 2013 PRL paper by Salih and Zubairy in depth. Team Collaboration and Communication. Open to discussing ideas, sharing progress, and learning collaboratively with peers and mentors.

Approximate Workload (# 8-hour days in a week): 4

Brief Description:

This project explores how quantum cryptography can be implemented using counterfactual communication, where information is transmitted without particles physically traveling between sender and receiver. Based on photonic setups like the Mach-Zehnder interferometer and nested interferometers, we will investigate how to securely exchange information using the absence of photons—a concept made possible through interaction-free measurements and the quantum Zeno effect.

The goal is to analyse and simulate cryptographic protocols that use this principle for quantum key distribution (QKD) and secure communication, ensuring data privacy even when the information-carrying particles are never detected in the communication channel. The intern will simulate photonic circuits, model photon behaviour under counterfactual protocols, and study how the no-cloning theorem and quantum superposition ensure the security of these schemes.

This project is ideal for someone curious about both quantum optics and quantum cryptography, with a passion for exploring futuristic, foundational ideas in secure communication.

Project qi25_02

Project Name: qDrift-Based Simulation of Non-Hermitian Quantum Dynamics

Mentors: Peter Yang

Detailed Plan: https://github.com/QWorld19/QIntern2025/tree/main/Project%20Plans

Approximate number of Interns: 1

Skill Prerequisite: Essential: Basic knowledge of quantum computing (qubits, gates, measurement). Familiarity with Hamiltonian simulation and Schrödinger evolution. Intermediate Python programming skills. Strong motivation to read technical papers and implement algorithms. Preferred: Prior use of Qiskit, PennyLane, or Cirq. Exposure to open quantum systems or non-Hermitian physics. Background in linear algebra, complex matrices, and operator norms.

Approximate Workload (# 8-hour days in a week): 1 to 2.5

Brief Description:

In traditional quantum simulation, Hermitian dynamics dominate due to the physical requirement of unitarity. However, recent interest in simulating open quantum systems and PT-symmetric systems has pushed the boundaries toward non-Hermitian evolution. This project aims to explore and implement a randomized algorithm — qDrift — adapted for simulating non-Hermitian Hamiltonians.

The intern(s) will investigate a recently developed observable-bound version of qDrift, which enables efficient estimation of expectation values rather than full state evolution. The core goal will be to implement and test this method in Python (using Qiskit or PennyLane), compare performance against Trotter-based methods, and apply the algorithm to simple non-Hermitian models like decay channels or PT-symmetric dimer systems. The project also aims to clarify the operational meaning of the observable error bounds and optimize sampling weights for accuracy and resource usage.

Project qi25_03

Project Name: Efficient Block-Encoding of Dense Matrices via QRAM using the Qrisp Framework

Mentors: Viraj Dsouza

Detailed Plan: https://github.com/QWorld19/QIntern2025/tree/main/Project%20Plans

Approximate number of Interns: 3

Skill Prerequisite: Successful applicants should have a strong foundation in basic quantum computing concepts, linear algebra, and familiarity with introductory quantum algorithms. Proficiency in Python and prior experience with any quantum programming framework are highly recommended. As preparation, interns are encouraged to study the block encoding technique and practice writing simple quantum programs using Qrisp tutorials. A high level of motivation and commitment is essential, as the project has a focused and well-defined objective.

Approximate Workload (# 8-hour days in a week): 3

Brief Description:

This project focuses on implementing scalable and modular quantum circuits for block-encoding dense classical matrices—an essential subroutine in many quantum algorithms. We follow the methodology of a recent paper that introduces optimized techniques for embedding classical data into unitaries using two resource-efficient approaches: a minimal-depth and a minimal-count method. These methods rely on efficient state preparation and QRAM-based data loading. The implementation will be done using Qrisp, a high-level Python framework for quantum software development. Interns will first build familiarity with Qrisp and the theory of block-encoding, then proceed to implement the key components (state preparation and QRAM circuits), integrate them into complete block-encoding routines, and test the scalability using real-world matrices. This project offers hands-on experience at the intersection of quantum algorithms and quantum software engineering, providing exposure to cutting-edge research and development practices.

Project qi25_04

Project Name: Quantum Communication over adversarial channels

Mentors: Abhishek Sadhu

Detailed Plan: https://github.com/QWorld19/QIntern2025/tree/main/Project%20Plans

Approximate number of Interns: 4

Skill Prerequisite: Preferred candidates will have a masters degree in Physics/Computer Science with a strong background either in quantum information theory or quantum computing or both. Required skill set: candidate is expected to have a good grasp on (a) Linear Algebra, (b) Matrix analysis, (c) Quantum Information Theory (have read the book QIT by Mark Wilde). Strong skills in python coding and familiarity with qiskit/qulacs, pytorch is highly desirable.

Approximate Workload (# 8-hour days in a week): 4

Brief Description:

We aim to address fundamental limitations on quantum communication through channels compromised by an adversary. Specifically, we investigate two fundamental challenges. Firstly, we aim to efficiently characterize the noise introduced by adversarial activities. For this, we aim to develop a task-specific minimal-measurement protocol for determining noisy channel parameters. Following this, we aim to develop a strategy for preserving properties of transmitted quantum states via the noisy channel deviating from traditional error correction techniques.

Project qi25_05

Project Name: Design of Quantum-Anamorphic Encryption Against Coercive Surveillance

Mentors: Kumar Prateek; Soumyadev Maity

Detailed Plan: https://github.com/QWorld19/QIntern2025/tree/main/Project%20Plans

Approximate number of Interns: 4

Skill Prerequisite: Candidates should possess a foundation in cryptography fundamentals, including a thorough understanding of classical cryptographic techniques such as symmetric and asymmetric encryption, as well as digital signatures. They must also demonstrate proficiency in quantum computing basics, encompassing knowledge of core principles like superposition, entanglement, QKD protocols, and familiarity with quantum programming frameworks (Qiskit, Cirq, or OpenQASM). Additionally, completion of a QBronze, QSilver, or Womainum Quantum certificate is desirable. Candidates are required to dedicate at least two 8-hour workdays per week to the project.

Approximate Workload (# 8-hour days in a week): 3

Brief Description:

The privacy guaranteed by encryption relies on two fundamental assumptions: the 'sender-freedom assumption' (the freedom to choose and encrypt your message) and the 'receiver-privacy assumption' (ensuring only the intended recipient can access the message). Although such assumptions underpin modern cryptography, governments increasingly demand backdoor access to keys or message manipulation - ostensibly for national security. Such measures, whether imposed by democracies or authoritarian regimes, create irreconcilable conflicts with privacy guarantees. Recently, Professor Moti Yung and colleagues offered a definitive technical response to such measures through anamorphic cryptography, demonstrating that even when dictators control keys, cryptosystems can still enable covert communication, preserving privacy despite apparent compliance with surveillance demands. Anamorphic encryption demonstrates that even when an adversary (dictator) possesses keys and plaintext messages and prohibits alternative cryptosystems, hidden communications can still be covertly piggybacked within compliant cryptographic protocols. Unfortunately, the original constructions rely on public-key primitives that are threatened through Shor's algorithm and related quantum attacks, limiting their long-term viability. Therefore, the proposed project aims to develop quantum-resistant anamorphic encryption protocols and its applications to real-world scenarios maintaining covert communication capabilities, providing the ultimate futility of dictatorial demands for encryption backdoors.

Project qi25_06

Project Name: Design of Quantum Classifier for Hate Video Classification in Online Media

Mentors: Kumar Prateek; Simranjit Singh; Vijay Kumar

Detailed Plan: https://github.com/QWorld19/QIntern2025/tree/main/Project%20Plans

Approximate number of Interns: 4

Skill Prerequisite: Applicants should possess a foundation in machine/deep learning fundamentals, including a thorough understanding and implementation experience of hybrid quantum-classical machine learning models. They should also demonstrate proficiency in purely quantum models, encompassing knowledge of quantum SVM, quantum neural networks, and familiarity with quantum programming frameworks (Qiskit or Cirq). Additionally, completion of a QBronze, QSilver, or Womanium Quantum certificate is desirable. Candidates are required to dedicate at least two 8-hour workdays per week to the project.

Approximate Workload (# 8-hour days in a week): 3

Brief Description:

The project aims to utilize the potential of quantum machine learning (quantum classification algorithm) to develop an efficient and accurate quantum classifier for identifying and classifying hate videos in online media platforms. Hate videos, that are known to spread harmful and discriminatory content, pose significant challenges for traditional classical machine learning approaches due to the complexity and high dimensionality of video data. The proposed project seeks to design a quantum classifier that can outperform classical methods in accurately detecting and categorizing hate videos. The scope of work includes a) Conducting a comprehensive literature review on quantum machine learning algorithms, quantum circuits, and their applications in video classification tasks, with a focus on hate speech and hate video detection. b) Investigating the limitations and challenges of classical machine learning approaches in hate video classification, such as data imbalance, high dimensionality, and the need for large computational resources. c) Design and implementation of quantum machine learning models specifically tailored for hate video classification tasks, exploring techniques like quantum neural networks, quantum support vector machines, or other quantum learning algorithms. d) Comparing the performance of the developed quantum classifier with traditional classifiers and analysing the advantages and limitations of the quantum techniques. e) Finally, documenting the findings, challenges, and future research directions in the field of quantum machine learning for hate video classification in online media.

Project qi25_07

Project Name: Molecular encoding for quantum machine learning

Mentors: Viki Kumar Prasad

Detailed Plan: https://github.com/QWorld19/QIntern2025/tree/main/Project%20Plans

Approximate number of Interns: 2

Skill Prerequisite: N.A.

Approximate Workload (# 8-hour days in a week): 3

Brief Description:

The goal of this project is to research the most efficient method of utilizing molecular representations or its descriptors for quantum machine learning. We are looking for solutions in QML with least number of qubits and compression of high – dimensional molecular representations without a high loss of information.

The molecular data, represented in formats like SMILES/SMARTS/SELFIES, will be encoded into quantum states using dedicated encoding schemes (such as molecular fingerprints, 2D/3D descriptors) to encode input data into a quantum circuit as an input state for the QML model. We then intend to benchmark these training models with the respective encoded 'quantum' descriptors and test the accuracy for relevant molecular properties.

This project aims to provide interns with hands-on experience in quantum machine learning, quantum circuit design, and molecular data processing. It is well-suited for students interested in the intersection of quantum computing and machine learning, as well as quantum chemistry. Students working in the pharmaceutical and drug discovery fields are also encouraged to apply.

Project qi25_08

Project Name: Quantum Computing for Civil Site Design Optimizations

Mentors: Vesselin Gueorguiev

Detailed Plan: https://github.com/QWorld19/QIntern2025/tree/main/Project%20Plans

Approximate number of Interns: 3

Skill Prerequisite: We're looking for applicants who have taken at least one or two computer science courses and are comfortable with data structures, algorithms, dynamic programming, and graphs. They should be familiar with Python and commonly used libraries. Experience with quantum computing or graph problems like MaxCut is a plus. An interest in real estate or land development is desirable, along with a strong willingness to learn and try new things.

Approximate Workload (# 8-hour days in a week): 3

Brief Description:

This project explores the potential application of quantum computing to optimize complex decisions in civil site design. Runopt currently helps real estate developers and civil engineers make early-stage design decisions—such as building placement, pipe routing, and grading—by evaluating multiple competing objectives like cost, compliance, and constructability. These problems often involve a vast solution space with many interdependent constraints, which are difficult to solve efficiently using classical algorithms. Quantum computing, particularly quantum-inspired optimization techniques like the Quantum Approximate Optimization Algorithm (QAOA), may offer a breakthrough in handling such combinatorial challenges at scale.

The intern will investigate how quantum algorithms could enhance Runopt's existing optimization engine, identify the most promising use cases (e.g., utility network layout or zoning constraint satisfaction), and assess feasibility based on the current state of quantum hardware and simulators. The outcome could include a prototype using quantum simulators (e.g., Qiskit or D-Wave) and a report outlining the future roadmap. This is an exploratory project ideal for interns curious about quantum computing and its intersection with real-world engineering applications.

Project qi25_09

Project Name: Play your way into Quantum

Mentors: Vesselin Gueorguiev

Detailed Plan: https://github.com/QWorld19/QIntern2025/tree/main/Project%20Plans

Approximate number of Interns: 2 to 4

Skill Prerequisite: Ideal applicants for the "Play your way into Quantum" project should possess a basic understanding of quantum concepts such as superposition, entanglement, and quantum gates, preferably gained through an introductory course like QWorld's "Quantum Computing 101." A strong familiarity with puzzle and escape room–style games is essential, along with an ability to analyse game mechanics and engagement strategies. Prior experience with educational projects or science communication is highly valuable, especially if it involved simplifying complex topics. An understanding of how people learn and the principles of effective pedagogy, even informally, will be helpful in designing meaningful learning experiences. Technical skills such as Google Sites web development, basic programming (Python, HTML/CSS), or familiarity with game design tools are a plus. Finally, applicants should demonstrate creativity, strong communication skills, and a genuine interest in making quantum computing more accessible through playful and engaging design.

Approximate Workload (# 8-hour days in a week): 3

Brief Description:

This project aims to demonstrate the potential of gamification in making complex quantum physics concepts accessible through an engaging and interactive game. The core idea is to develop a proof-of-principle game that incorporates escape room mechanics within a larger quantum quest. Players will navigate a series of challenges and puzzles designed to incrementally introduce and reinforce difficult quantum physics principles essential for understanding quantum computing. The game will likely feature multiple distinct escape rooms, each focusing on a specific quantum concept. These concepts could include superposition, entanglement, quantum gates, and qubit manipulation. By actively participating in the game and solving puzzles that require applying these principles, players can develop an intuitive understanding that goes beyond passive learning from textbooks or lectures. The interactive nature of the game will provide immediate feedback, allowing players to correct misconceptions and solidify their knowledge. This approach seeks to transform the often-intimidating subject of quantum physics into an enjoyable and rewarding learning experience, potentially attracting a wider audience to the field of quantum computing. The success of this proof-of-principle could pave the way for the development of more comprehensive and sophisticated educational games for quantum science.

Project qi25_10

Project Name: QTagger: Quantum Machine Learning for Ransomware Tagging and Classification

Mentors: Simranjit Singh; Mohit Sajwan

Detailed Plan: https://github.com/QWorld19/QIntern2025/tree/main/Project%20Plans

Approximate number of Interns: 5

Skill Prerequisite: (1) A solid grasp of machine and deep learning concepts. (2) Hands-on experience with hybrid quantum-classical models. (3) Working knowledge of quantum programming platforms like Qiskit, PennyLane, or Cirq. (4) Exposure to quantum ML algorithms such as quantum SVMs, QNNs, and quantum kernels. (5) A certificate from programs such as QBronze, QSilver, or Womanium is preferred. (6) Strong self-motivation and commitment to dedicate at least two full 8-hour days per week to project work.

Approximate Workload (# 8-hour days in a week): 3

Brief Description:

This project explores the use of Quantum Machine Learning (QML) for classifying ransomware from large-scale malware datasets. With the exponential growth in ransomware threats and the complexity of modern attacks, traditional machine learning models often face performance bottlenecks, especially in high-dimensional settings. QML offers a promising alternative by leveraging quantum circuits to potentially accelerate computations and handle complex patterns more efficiently.

The primary goal of this project is to develop hybrid quantum-classical models for accurate ransomware classification and assess their scalability and practicality using current quantum technologies. We will explore models such as Variational Quantum Classifiers (VQC), Quantum SVM, and quantum kernel estimation techniques. The interns will work on data preprocessing, model design, training using simulators, and performance evaluation against classical baselines. The project will provide hands-on exposure to frameworks like Qiskit, PennyLane, and TensorFlow Quantum.

By the end of six weeks, we aim to produce a working prototype and a research draft suitable for submission to a cybersecurity or quantum computing venue. This initiative also serves to evaluate the readiness of QML for real-world cybersecurity applications.

Project qi25_11

Project Name: Solving routing problems using quantum annealing

Mentors: Paweł Gora

Detailed Plan: https://github.com/QWorld19/QIntern2025/tree/main/Project%20Plans

Approximate number of Interns: 5

Skill Prerequisite: Experience with quantum annealing and designing QUBO formulations for combinatorial optimization problems

Approximate Workload (# 8-hour days in a week): 2

Brief Description:

We would like to investigate quantum annealing approaches to solve the Capacitated Vehicle Routing Problem with Time Windows. We've defined 2 QUBO formulations for this problem but would like to reduce the number of necessary qubits, implement the programs and conduct the experiments using D-Wave's Leap framework.

Project qi25_12

Project Name: Quantum Circuits for Open System Dynamics: Simulating the GKSL Master Equation

Mentors: Haris Ansari

Detailed Plan: https://github.com/QWorld19/QIntern2025/tree/main/Project%20Plans

Approximate number of Interns: 2

Skill Prerequisite: Knowledge in Open Quantum Systems and Numerical methods for solving Partial Differential Equations. It's also important to be comfortable with numerical methods for differential equations (for example, simple finite-difference schemes or time-stepping methods such as Euler and Crank–Nicolson). On the programming side, Python skills (including NumPy and SciPy for matrix operations and ODE solvers) and experience with a quantum SDK such as Qiskit or PennyLane. Finally, since this is a team project, familiarity with Git for version control, writing clear code comments, and organizing your work into modules.

Approximate Workload (# 8-hour days in a week): 1

Brief Description:

This project explores the application of cutting-edge quantum computing techniques to solve nonlinear differential equations that arise in quantum mechanics. Central to the approach is the reformulation of complex ODEs —such as the GKSL master equation—into linear systems amenable to quantum algorithms.

Participants will develop quantum circuits using Hamiltonian simulation and variational methods and systematically benchmark them against classical approaches. Emphasis will be placed on analysing quantum resource demands (e.g., qubit count, circuit depth) and error scaling across different hardware platforms and simulators.

Outcomes include a modular quantum solver library. This project offers a rigorous introduction to quantum numerical methods and their real-world applications.

Project qi25_13

Project Name: QuantumShield: Securing IoT Against Botnets with Quantum Computing

Mentors: Mohit Sajwan

Detailed Plan: https://github.com/QWorld19/QIntern2025/tree/main/Project%20Plans

Approximate number of Interns: 5

Skill Prerequisite: Strong programming skills in Python. Basic understanding of machine learning concepts and libraries such as Scikit-learn, TensorFlow, or PyTorch. Familiarity with data preprocessing, feature selection, and classification techniques. Experience on quantum computing frameworks such as Qiskit or PennyLane for quantum machine learning model development. Interest or experience in nature-inspired optimization algorithms (e.g., Genetic Algorithm, Particle Swarm Optimization) is a plus.

Approximate Workload (# 8-hour days in a week): 3

Brief Description:

The exponential growth of IoT (Internet of Things) devices has revolutionized modern living—but also exposed networks to serious security threats, especially botnet-based cyberattacks. QuantumShield is a cutting-edge research project that explores how quantum computing can be leveraged to detect and mitigate botnet activity within IoT networks.

Interns will work with real-world IoT network traffic datasets and apply nature-inspired optimization algorithms—such as Genetic Algorithms and Particle Swarm Optimization—for intelligent feature selection. This step ensures improved detection accuracy while minimizing computational complexity.

The core focus will be on designing and developing a novel quantum-enhanced model that utilizes quantum computing principles like superposition and entanglement to improve botnet detection performance. The model may also include hybrid quantum-classical learning components to maximize efficiency and interpretability.

Interns will gain hands-on experience in cybersecurity, feature engineering, quantum machine learning (QML), and nature-inspired algorithms. This project is ideal for students passionate about the intersection of AI, networks, and quantum technologies, and eager to contribute to futuristic security solutions.

Project qi25_14

Project Name: Framework for efficient computing in distributed quantum systems.

Mentors: Abhishek Sawaika

Detailed Plan: https://github.com/QWorld19/QIntern2025/tree/main/Project%20Plans

Approximate number of Interns: 4 to 6

Skill Prerequisite: A suitable candidate should have prior knowledge of quantum information theory and computing in general. A hands-on experience in Java and Python programming and at least one library for quantum programming. Knowledge of discrete event simulation, distributed computing and optimization problems could be a bonus. Could consider at most one intern without prior knowledge of quantum computing but should have a strong motivation and experience in related areas.

Approximate Workload (# 8-hour days in a week): 2 to 3

Brief Description:

In the current NISQ era, it becomes important to combine and efficiently utilize multiple quantum processors for a collective use of computing power. In order to do so, we need an optimal strategy for efficient task distribution and resource utilization. This can be modelled as an optimization problem under some constraints and chosen objective functions. In this project, we will design an inclusive framework for modelling a realistic and the best possible scenario of the general class of such problems and explore quantum and classical approaches to solve them for a system of quantum processors, performing multiple tasks in parallel. We will also work towards building open-source software for simulating such systems of distributed quantum processors in general.

Project qi25_15

Project Name: Quantum Reservoir Computing for Sustainable Time-Series Forecasting in High-Energy Physics

Mentors: Shalini Devendrababu; Srinjoy Ganguly

Detailed Plan: https://github.com/QWorld19/QIntern2025/tree/main/Project%20Plans

Approximate number of Interns: 3

Skill Prerequisite: Successful candidates will have a strong background in quantum computing using Qiskit and PennyLane. They should be able to work sincerely during the duration of the internship and be updated with the latest quantum research activities. Some background on machine learning is also expected.

Approximate Workload (# 8-hour days in a week): 3

Brief Description:

We propose a modular research project to apply Quantum Reservoir Computing (QRC) to time-series forecasting in high-energy physics. Focusing on publicly available physics datasets (e.g. Fermilab's BOOSTR accelerator data or cosmic-ray flux records), we will forecast interpretable targets such as beam energies or detector count rates. Our implementation will use Python (Qiskit/PennyLane for quantum simulation, PyTorch and scikit-learn for data processing and models). In QRC, a fixed quantum dynamical system maps input time series into high-dimensional observables, and only a simple linear readout is trained. This leads to sustainable models with greatly reduced training cost and memory compared to deep networks. We will benchmark QRC against classical baselines (e.g. LSTM and Echo State Networks), evaluating forecast accuracy and resource usage. The project deliverables will include an open GitHub repository with code and data, and a paper draft targeting a high-impact venue. Key novelties are the application of QRC to real physics data and emphasis on model sustainability (low training time and footprint), along with interpretability of forecasting.

Project qi25_16

Project Name: Automated Design Framework for Networked Quantum Artificial Intelligence and Its Applications

Mentors: Louis Chen

Detailed Plan: https://github.com/QWorld19/QIntern2025/tree/main/Project%20Plans

Approximate number of Interns: 5

Skill Prerequisite: Successful applicants should have a strong foundation in linear algebra, probability theory, and basic quantum mechanics, as well as proficiency in Python programming. Prior experience with quantum computing frameworks such as Qiskit, PennyLane, or similar platforms is highly desirable, though not strictly required. Familiarity with machine learning concepts and interest in distributed systems or networking will be beneficial. Most importantly, applicants should demonstrate a strong motivation to explore cutting-edge research at the intersection of quantum computing and artificial intelligence, along with a willingness to learn, collaborate, and contribute to a multidisciplinary team.

Approximate Workload (# 8-hour days in a week): 3

Brief Description:

This project explores the development of an automated design framework for networked quantum artificial intelligence (QAI) systems, which aim to integrate quantum computing capabilities with AI across distributed architectures. As quantum technologies advance, there's growing interest in building scalable quantum networks that can host and coordinate quantum machine learning models across interconnected nodes. However, designing such systems is complex due to constraints in quantum hardware, communication latency, and the probabilistic nature of quantum algorithms.

The proposed framework will streamline the design, simulation, and evaluation of networked QAI architectures. Interns will help prototype automated tools for generating hybrid quantum-classical models, optimizing entanglement distribution, and simulating performance on various network topologies. The project will also explore use cases such as distributed learning, federated quantum inference, and edge-cloud QAI systems.

This is a multidisciplinary project combining quantum computing, AI, networking, and software engineering. Interns will gain hands-on experience with quantum programming tools (e.g., Qiskit, PennyLane), network modeling, and system-level optimization strategies. By the end of the project, participants will contribute to a foundational framework that can accelerate research and deployment of practical networked quantum AI applications.