

Jasper Sands

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EDUCATION

Columbia University

September 2025 - Dec 2026

Master of Science in Computer Science, GPA: 3.91/4.0

Coursework: Quantum Simulation and Computing Lab, Quantum Optimization and ML, Quantum Engineering

TA: Introduction to Quantum Computing

Washington University in St. Louis

Aug 2021- May 2025

Bachelor of Science in Computer Science and Economics, GPA: 3.81/4.0

Coursework: Machine Learning, Artificial Intelligence, Analysis of Algorithms, Algorithms for Biosequence Comparison

TA: Reverse Engineering and Malware Analysis; Parallel and Concurrent Programming

SKILLS

Quantum Computing & Algorithms: Hamiltonian simulation, quantum phase estimation (QPE), amplitude amplification, VQE, QAOA, hybrid quantum-classical optimization, circuit design, error correction fundamentals

Quantum Software & Simulation: Qiskit, circuit simulation and transpilation, noise-aware simulation, benchmarking

Programming & Scientific Computing: Python, C++, C, MATLAB, NumPy, Pandas, NetworkX, PyTorch, TensorFlow

Mathematics & Theory: Linear algebra, tensor methods, probability, complexity/query analysis, oracles, BQP/QMA

RESEARCH

Cidon Systems Research Lab

Sep 2025 - Present

Graduate Researcher

- Developed machine learning approaches for phishing detection using language-model embeddings and telemetry
- Designed and evaluated classification pipelines with explicit attention to precision-recall tradeoffs

Complex Resilient Intelligent System Lab

May 2025 - Dec 2025

Graduate Researcher

- Developed ontology and graph-based methods to reduce hallucinations in AlphaFold predictions
- Built interpretable protein-structure reasoning pipelines grounded in molecular graph data

Foster System Database Undergraduate

Sep 2024 - May 2025

Undergraduate Researcher

- Fine-tuned LLaMA-3 models for question answering over a corpus of 50k foster-care policy documents
- Implemented human-in-the-loop reinforcement learning workflows to iteratively refine model behavior
- Enabled cross-state policy comparison and interactive analysis of foster-care outcomes for researchers

WORK EXPERIENCE

Highnote

May 2024 - Jul 2024

Cybersecurity Engineer Intern

- Designed a large-scale telemetry and monitoring pipeline integrating AWS, GCP, and Datadog into Elasticsearch
- Built ingestion and indexing infrastructure supporting >1 TB/day of structured and unstructured event data
- Developed rule-based and ML-assisted detection logic for anomalous authentication, command execution, and data access patterns

Mindtrip

May 2023 - Jul 2023

Software Engineer Intern

- Developed internal data-management and control dashboards using JavaScript and Ruby on Rails via Retool
- Enabled safe, auditable interaction with production datasets, replacing manual database interventions
- Reduced operational overhead by automating data workflows and validation checks

Bugcrowd

May 2020 - Jul 2020

Associate Application security Engineer

- Analyzed and validated vulnerability reports from a large, distributed researcher community
- Worked with enterprise clients to prioritize remediation based on technical severity and exploitability
- Gained experience with large-scale triage, classification, and decision-making under uncertainty

COMPETITIONS

- **Overall Winner**, iQuHACK 2026; Qualified for NYUAD Quantum Hackathon for Social Good, April 2026
- **Audience Favorite**, Hamoniqs Quantum Design Hackathon 2026
- **Runner-Up**, Qualcomm Snapdragon Multiverse Hackathon 2026