Iizalaarab Elhaimeur

Curriculum Vitae

(757) 915-0029 | izzyelhaimeurllc@gmail.com | ielha003@odu.edu | izzyelhaimeur.com
linkedin.com/in/iizalaarab-elhaimeur | github.com/Izzy-Elizzy | Hampton, VA

Research Interests

Quantum computing and artificial intelligence: multi-agent LLM systems, intelligent tutoring systems, AI agents for quantum computing education and research, and the systems engineering needed to deploy them in real courses and research groups.

Education

Old Dominion University Norfolk, VA
Ph.D. in Computer Science, GPA: 3.90 *Jan 2026 – Present*

- Advisor: Prof. Nikos Chrisochoides, Richard T. Cheng Endowed Chair Professor of Computer Science
- Research focus: the intersection of quantum computing and AI, Center for Real-Time Computing (CRTC)
- Coursework: Natural Language Processing, Information Retrieval, Data Mining and Security, Deep Learning, Research Methods, Generative AI (in progress)

Old Dominion University Norfolk, VA
M.S. in Computer Science, GPA: 3.95 *Dec 2025*

- Thesis: *Toward Personalizing Quantum Computing Education: An Evolutionary LLM-Powered Approach*
- Advisor and thesis director: Prof. Nikos Chrisochoides; committee: Prof. Ravi Mukkamala, Dr. Soad F. Ibrahim
- Coursework: Utility Scale Quantum Computing, Quantum Computing, Algorithms and Data Structures, Artificial Intelligence, Database Concepts, Cryptography for Cybersecurity, Operating Systems, Computer Architecture

Old Dominion University Norfolk, VA
B.S. in Computer Science, GPA: 3.87, Graduated with Distinction *Dec 2024*

- Dean's List: 2022, 2023, 2024

Publications

Peer-Reviewed Conference Papers

1. **I. Elhaimeur** and N. Chrisochoides, "From prototype to classroom: An intelligent tutoring system for quantum education," in *Proc. IEEE Int. Conf. Quantum Computing and Engineering (QCE)*, Toronto, Canada, 2026. arXiv:2604.24807
2. **I. Elhaimeur** and N. Chrisochoides, "Toward personalizing quantum computing education: An evolutionary LLM-powered approach," in *Proc. IEEE Int. Conf. Quantum Computing and Engineering (QCE)*, Albuquerque, NM, 2025. doi:10.1109/QCE65121.2025.20549

Preprints

3. **I. Elhaimeur** and N. Chrisochoides, "ITAS: A multi-agent architecture for LLM-based intelligent tutoring," arXiv preprint arXiv:2604.24808, 2026.
4. **I. Elhaimeur** and N. Chrisochoides, "Latency and cost of multi-agent intelligent tutoring at scale," arXiv preprint arXiv:2604.24110, 2026.

Thesis

5. **I. Elhaimeur**, "Toward personalizing quantum computing education: An evolutionary LLM-powered approach," M.S. thesis, Dept. of Computer Science, Old Dominion University, Norfolk, VA, 2025. doi:10.25777/x63b-4b67

Research Experience

Center for Real-Time Computing, Old Dominion University — Norfolk, VA
Graduate Researcher (ODU–Google partnership) — *Aug 2024 – Present*

- Led development of ITAS, a multi-agent AI tutor for quantum computing built in partnership with Google, taking it from a local prototype to a cloud system used by a graduate quantum computing course for a full semester
- Designed a novel multi-agent architecture of parallel specialist agents that eliminated the task-switching hallucinations of single-agent AI tutors in a semester-long classroom deployment
- Designed a privacy-preserving analytics system that lets instructors question student learning data in plain language while keeping individual student records siloed; it surfaced a curriculum gap that led to a mid-semester course revision
- Benchmarked multi-agent AI tutoring under classroom load, showing real-time responses for a full class of simultaneous users and a projected per-student cost below a single textbook, from a seminar up to a university-wide rollout
- Designed a live, bidirectional voice AI lecturer that replaces pre-recorded video with two-way lectures students can interrupt, question, and resume, piloted both one-on-one and as an in-class AI co-teacher

NASA Headquarters — Washington, DC
AI/ML Research Intern — *Sep 2024 – Nov 2024*

- Achieved a 96× speedup in scientific paper summarization (8 hours to 5 minutes) using NASA's HPC infrastructure
- Developed Expertise Finder V3 for NASA ADS, reducing the codebase by 40% while improving maintainability
- Built a researcher matching system that uses NLP to identify expert reviewers from publication histories
- Wrote deployment documentation for running LLMs on HPC resources, enabling future AI research

Honors and Awards

- Richard T. and Nancy P. Cheng Award in Computer Science, Old Dominion University — 2026–2027
- Dr. Irwin B. Levinstein Scholarship, Old Dominion University — Spring 2025
- Badge of Excellence, IBM Quantum Summer School — 2024

Presentations

1. "From prototype to classroom: An intelligent tutoring system for quantum education," IEEE Quantum Week (QCE 2026), Toronto, Canada, 2026.
2. "Toward personalizing quantum computing education: An evolutionary LLM-powered approach," IEEE Quantum Week (QCE 2025), Albuquerque, NM, 2025.
3. Four research posters on AI and quantum computing, ODU–Google Enablement Partnership, Old Dominion University.

Teaching Experience

Old Dominion University — Norfolk, VA
Teaching Assistant, Computer Science Tutor — *Aug 2024 – Present*

- Tutor undergraduate students in computer science fundamentals, programming, and algorithms
- Lead one-on-one and group tutoring sessions to support student success in CS coursework

Research Support

- ITAS research sponsored in part by the Richard T. Cheng Endowment and supported by MonarchSphere (ODU's AI incubator with Google Cloud) and Google Cloud Platform research credits

Certifications

- QWorld Quantum Certificates (Bronze, Silver, Gold)
- Quantum Algorithm Design Fundamentals, Classiq
- AI Agents Course, Hugging Face

Open Source

- Google Agent2Agent (A2A) Protocol, contributor to the open standard for multi-agent communication
- Google Agent Development Kit (ADK), contributor

Selected Projects

- **ISBN Pricer** (iOS App Store): real-time book price comparison app (React Native, Python) with a fault-tolerant scraping system handling 10K+ daily price checks
- **DailyPolicyReport** (founder and lead developer): full-stack platform using LLMs to summarize Congressional bills, with 1,000+ daily active visitors
- **First Light**: interactive neural network visualization that teaches machine learning through hands-on digit recognition (React, Canvas)

Technical Skills

Languages: Python, Java, JavaScript, TypeScript, C, C++, Q#, SQL, HTML/CSS
Quantum: Qiskit, PennyLane, Cirq, quantum algorithms, quantum machine learning
AI/ML: PyTorch, TensorFlow, Hugging Face, LangChain, LLM APIs (Gemini, Claude, OpenAI), BERT
Agent Development: Google ADK, A2A Protocol, multi-agent orchestration
Data Science: pandas, NumPy, Matplotlib, Jupyter, BigQuery
Cloud/HPC: Google Cloud (Cloud Run, Cloud Storage, Cloud SQL, Pub/Sub, Artifact Registry), Vertex AI, AWS, Docker, Kubernetes, HPC
Web/Backend: React, Next.js, React Native, Node.js, FastAPI, PostgreSQL, MongoDB, REST APIs
Tools: Git, Linux