Shawal Khalid

Assistant Professor of Instruction | Division of Data Science | University of Texas at Arlington

Arlington, TX | shawal.khalid@uta.edu | shawalkhalid.github.io | Google Scholar

EDUCATION

Ph.D. in Computer Science | Virginia Tech, Blacksburg, VA | **August 2026**

Dissertation: Advancing Blockchain-Oriented Software Engineering: Empirical Investigations and AI-Augmented Tooling for Secure Development (defended August 14, 2026). Advisor: Dr. Chris Brown.

M.S. in Computer Science | Virginia Tech | May 2024

B.S. in Computer Science | COMSATS University Islamabad | January 2022

ACADEMIC APPOINTMENTS & TEACHING

Assistant Professor of Instruction | University of Texas at Arlington | September 2026–present

- Teach **DATA 3402: Python** and co-teach **DATA 3461: Machine Learning** (Fall 2026).
- Developed **DATA 4392 / ASDS 6300: Applied Agentic AI and LLM Systems** for Spring 2027, covering Python-based LLM applications, retrieval-augmented generation, tool-using agents, and evaluation.

Instructor of Record | Virginia Tech | 2024, 2026

- Taught CS 4264: Principles of Computer Security (Spring 2026) and CS 3704: Intermediate Software Engineering (Spring 2024; 98 students).
- Received Virginia Tech's **Instructor of Record Award** (2024).

Graduate Teaching Assistant | Virginia Tech | 2022–2025

- Courses: CS 4104 Data and Algorithm Analysis; CS 5594 Blockchain Technologies; CS 5580 Principles of Computer Security; CS 1114 Introduction to Software Design.

RESEARCH EXPERIENCE & PROJECTS

Graduate Research Assistant | Virginia Tech | May 2022–August 2026

- **Smart-contract auditing benchmark (ESEM 2026):** Evaluated seven static and LLM-based tools on 143 SmartBugs Curated contracts and 173 FORGE contracts; studied accuracy, top-K detection, execution robustness, and cross-dataset transfer.
- **ChainSentinel:** Developed a multi-agent LLM research framework for vulnerability detection and explainable smart-contract auditing.
- **Generative AI in smart-contract development (BSCI 2025):** Examined developer perceptions (survey of 114) and evaluated generated Solidity code.

SELECTED PUBLICATIONS

Khalid, S., Tuckett, J., & Brown, C. (2026). **Do Smart Contract Auditing Results Transfer Across Datasets? A Two-Benchmark Empirical Study of Static and LLM-Based Security Tools.** *ESEM 2026*, LIPIcs 394, Article 45. DOI.

Khalid, S., & Brown, C. (2025). **Evaluating Capabilities and Perspectives of Generative AI Tools in Smart Contract Development.** *ACM BSCI 2025*. DOI.

Decoding the Influence: Analyzing the Impact of Crypto Signals on Software Repositories. *IEEE SANER 2025*.

Exploring Stakeholder Challenges in Recruitment for Human-Centric Computing. *IEEE VL/HCC 2024*.

A Comprehensive Approach to Supporting Blockchain Developers. *IEEE VL/HCC 2024*.

Software Engineering Approaches Adopted by Blockchain Developers. *IEEE SDS 2023*.

OTHER PROFESSIONAL EXPERIENCE

React Native Developer Intern | XNET Mobile Inc., CA | January–May 2025

- Built Web3 mobile application features using React Native and ethers.js; integrated wallet authentication, APIs, and testing workflows.

Blockchain Developer & Research Analyst | Block Ventors, Lahore | January–December 2021

- Worked with Hyperledger Fabric and developed blockchain-enabled supply-chain tracing software.

TECHNICAL AREAS

AI/ML: LLM evaluation, fine-tuning, RAG, multi-agent systems, PyTorch, Transformers, Hugging Face. **Software and security:** Python, Solidity, static analysis, smart-contract security, Git, Docker, FastAPI, PostgreSQL.