

Madhab Chandra Das

Academic Curriculum Vitae

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Research Profile

Doctoral researcher and Graduate Research Assistant in Digital and Cyber Forensics at Sam Houston State University, with a current CGPA of 4.00. Combines forensic examination, Python scripting, and machine learning to study the reliability of digital evidence interpretation and AI-assisted reporting. Research spans Android, network and memory forensics, IoT security, and simulated quantum security. Supports undergraduate learning through lab instruction, assessment, and tutoring. Brings previous experience in banking due diligence, staff training, and team leadership.

Education

PhD in Digital and Cyber Forensics | Sam Houston State University

August 2025–Present | Expected July 2029 | Current CGPA: 4.00

Research adviser: Qingzhong Liu, PhD, Professor of Computer Science

Master's in Cybersecurity | Washington University of Science and Technology

October 2023–June 2025 | CGPA: 3.92/4.00

MBA | Jahangirnagar University | August 2020–July 2022 | CGPA: 3.13/4.00

BSc in Electrical and Electronic Engineering | UITS | August 2008–January 2013 | CGPA: 3.83/4.00

Relevant Graduate Coursework

Completed with grade A: Operating System Forensics, Network Forensic Analysis, Live System & Memory Forensics, E-Discovery, Mobile Device Forensics, DF Laboratory Management, Cryptography & Steganography, and Scientific Communications.

In progress, Fall 2026: File System Forensics and Computational Forensics.

Academic Experience

Graduate Research Assistant and Teaching Assistant

Sam Houston State University, Department of Computer Science | August 2025–Present

- Conduct forensic research using Python, artifact examination, structured datasets, and evaluation of AI and machine learning outputs.
- Conduct lab classes, proctor examinations, grade exam responses, and provide tutoring outside scheduled class hours.

Courses supported

DFSC 3316 — Cryptography and Network Security | Spring and Fall 2026

COSC 1437 — Programming Fundamentals II | Fall 2025

DFSC 2316 — DF and IA Fundamentals II | Fall 2026

Research Experience

Android Forensic Reporting

Examined public Android 13 data and a physical LG device using Python and ALEAPP. Generated reports through three LLM APIs and evaluated 612 claims across six reports against verified findings.

Network Traffic Analysis

Prepared two encrypted traffic datasets and evaluated four ML models. Analyzed 41,238 external false positives (4.35% FPR) using SHAP and permutation importance.

Windows Memory Forensics

Built 1,899 process records with 18 features from 45 memory dumps using Volatility 2.6. Evaluated three ensembles with dump-grouped validation against rule-derived labels.

Quantum Security and Forensics

Generated two physics-inspired synthetic QKD datasets with 5 million records each. Implemented classifiers and examined reliability under changed simulation conditions.

Mobile Screenshot Forensics

Contributed literature review and manuscript writing to ScreenForensics.

Practical Forensic Training

Windows and Operating System Forensics

Created forensic images, recovered deleted files, examined files and metadata, and performed hex analysis and password recovery. Analyzed Registry, event logs, application and user activity, USB artifacts, email headers, and browser artifacts, including LevelDB, IndexedDB, cache, cookies, history, and HAR records.

Network Forensics

Used Wireshark and TShark to examine TCP connections, handshakes, visible payloads, login-related information, and suspicious traffic. Identified IP addresses associated with potentially malicious activity.

Mobile and Memory Forensics

Used ALEAPP for Android artifact analysis and Linux scripting for memory analysis. Research also used Volatility 2 and 3, with Volatility 2.6 supplying the final process-feature dataset.

E Discovery

Completed case-based exercises involving electronic records and preservation. Studied TAR, METS, the Federal Rules of Civil Procedure and Criminal Procedure. Used PST Analyzer, MBOX Viewer, and GoldFynch.

Publications

Published Papers

Sajid Ahmed, Tasnia Tabassum, Madhab Chandra Das, Uzair Hussain, and Vung Pham. "Backbone-Level Enhancements in YOLOv9 for Traffic Accident Detection from Video Footage." *Electronics*, 15(10), 2178, 2026.

Sajid Ahmed, Madhab Chandra Das, Ayodeji Yahaya, Min Kyung An, and Kaitlin Hopkins. "Multi-Class Plant Disease Classification with Synthetic Co-Infection Data Using YOLOv11." *IEEE World AI IoT Congress (AllIoT)*, pp. 1–9, 2026.

FT Liza, MC Das, PP Pandit, A Farjana, AM Islam, and F Tabassum. "Machine Learning-Based Relative Performance Analysis for Breast Cancer Prediction." IEEE World AI IoT Congress (AllIoT), pp. 7–12, 2023.

Accepted Papers

Madhab Chandra Das, Sajid Ahmed, Tasnia Tabassum, and Qingzhong Liu. "Evidence-Grounded LLM-Assisted Android Mobile Forensic Reporting." IEEE TPS 2026. Accepted.

Madhab Chandra Das, Sajid Ahmed, Uzair Hussain, and Pham Van Vung. "Simulation-Based Quantum Forensics for QKD: Machine Learning Attack Detection and Signature Extraction." QUANCOM 2026. Accepted

Madhab Chandra Das and Qingzhong Liu. "Explaining Cross-Dataset False Positives in Encrypted Traffic Classification for Forensic Interpretation." IEEE UEMCON 2026. Accepted.

Madhab Chandra Das, Sajid Ahmed, and Qingzhong Liu. "Machine Learning Prediction is Not Enough for Forensic Interpretation: A Cross-Dataset Reliability Study of Network Traffic Classification." IEEE IEMCON 2026. Accepted.

Sajid Ahmed, Madhab Chandra Das, Tasnia Tabassum, and Qingzhong Liu. "Toward Forensic-Ready Intrusion Detection: An Empirical Study of Cross-Dataset Generalization and SHAP Stability." IEEE IEMCON 2026. Accepted.

Tasnia Tabassum, Madhab Chandra Das, Sajid Ahmed, and Qingzhong Liu. "ScreenForensics: A Multimodal Framework for Forensic Classification in Mobile Screenshots." IEEE UEMCON 2026. Accepted.

Sajid Ahmed, Madhab Chandra Das, Tasnia Tabassum, and Qingzhong Liu. "Robust Deepfake Voice Detection Under WhatsApp-Style Opus Compression, Environmental Noise, and Generator Mismatch." IDFC 2026. Accepted

Madhab Chandra Das and Amar Rasheed. "Rule-Derived Process Classification in Windows Memory Forensics: A Reliability-Oriented Evaluation." ISDFS 2027. Accepted.

Manuscripts Under Review

Madhab Chandra Das and Qingzhong Liu. "Investigator-Centered Real-Time IoT IDS Using ML and XAI: A Systematic Survey and Framework." ACM Computing Surveys. Under review.

Sajid Ahmed, Madhab Chandra Das, and Narasimha Shashidhar. "Labeling Strategies in Technology Assisted Review: Performance, Explainability, and Legal Risk." ISDFS 2027. Under review.

Research Datasets

Madhab Chandra Das. QKD-Forensic-Dataset: Initial Dataset Release. Zenodo, December 1, 2025.

DOI: [10.5281/zenodo.17773084](https://doi.org/10.5281/zenodo.17773084)

Madhab Chandra Das. QF-LOG: Quantum Forensic Dataset for QKD Networks. IEEE DataPort, February 24, 2026.

DOI: [10.21227/s0qw-mb45](https://doi.org/10.21227/s0qw-mb45)

Academic Service

Reviewer Service

- CIDDF 2025 — International Conference in Cybersecurity, IoT, Data Science, and Digital Forensics: 3 papers.
- ICTA 2026 — International Conference on Advances in Information and Communication Technology: 5 papers.
- QUANCOM 2026 — International Conference on Quantum Computing Infrastructure & Technologies: 3 papers.
- Cybersecurity, Springer Nature, 2026: 2 manuscripts.
- IEEE IRI 2026 — 27th International Conference on Information Reuse and Integration for Data Science: 3 papers.

Program Committee Membership

- QUANCOM 2026.
- 38th IEEE International Conference on Tools with Artificial Intelligence (ICTAI), 2026.
- Chen Institute Symposium for AI Advancing Science & Society (AIAS+), 2026.

Scholarships and Academic Honors

- COSET PhD Digital & Cyber Forensics Scholarship, SHSU, 2025–2026. Renewed for 2026–2027.
- WUST Presidential Honor: Summer 2024, Fall 2024, and Spring 2025.
- Scholarship for Outstanding Result, WUST, 2024.
- Scholarship for Outstanding Result in BSc, UITs, 2009 and 2010.

Leadership

President, Bangladesh Student Association, SHSU | August 2025–Present

Term ends in July 2027. Organize cultural, social and educational events, support incoming students, and collaborate with other organizations.

Additional Professional Experience

The City Bank Ltd., Bangladesh | March 2017–July 2022

Associate Manager | December 2021–July 2022

Assistant Manager | January 2019–November 2021

Senior Officer and Team Leader | May 2018–January 2019

SPMO and GL, contractual | March 2017–May 2018

Experience in banking due diligence, customer relationships, staff training, and leadership of 11–15 team members.

Mutual Trust Bank Ltd. | Senior Sales Officer, contractual | September 2016–February 2017

BRAC Bank Ltd. | Trainee Officer, contractual | June 2013–June 2016

BRAC Bank Ltd. | Technology Intern | June–September 2011

Internship support included Windows reinstallation, application troubleshooting, hardware, printers, and document archiving.

Conference Presentations

QUANCOM 2026 — Simulation-Based Quantum Forensics for QKD: Machine Learning Attack Detection and Signature Extraction. September 1–4, 2026, Trento, Italy.

IDFC 2026 — Robust Deepfake Voice Detection Under WhatsApp-Style Opus Compression, Environmental Noise, and Generator Mismatch. September 1–4, 2026, Trento, Italy.

Technical Skills

Forensic tools: Autopsy, FTK Imager, HxD, John the Ripper, Wireshark, TShark, ALEAPP, Volatility 2 and 3.

Programming and systems: Python, PowerShell, SQL, Linux, VirtualBox, Kali Linux, Parrot OS.

AI and analysis: Random Forest, XGBoost, LightGBM, CatBoost, Logistic Regression, SHAP, permutation importance, LLM APIs.

E-discovery: PST Analyzer, MBOX Viewer, GoldFynch. Productivity: Microsoft Excel, PowerPoint and Word.

Training and Professional Development

Cybersecurity and Cloud

Cybersecurity and Risk Management Specialist — PIIT | 2024

Getting Started with AWS Cloud Essentials — AWS through W3Schools | 2024

Learning Cryptography and Network Security — LinkedIn Learning | 2026

Wireshark: Functionality — LinkedIn Learning | 2026

Artificial Intelligence and Quantum Computing

Artificial Intelligence Training — SHSU | 2026

Introduction to Quantum Computing — LinkedIn Learning | 2026

Peer Review Training

An Introduction to Peer Review — Clarivate | 2025

Certified Peer Reviewer Course — Elsevier Researcher Academy | 2025

Practical Participation

Capture the Flag Security Event — Cisco-SHSU | February 2026.