

Saurav Ghosh

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EDUCATION

PhD, Computer Science — Washington University in St. Louis | GPA 3.8 | Algorithms, Human-AI Teaming exp. 2031
MS, Computer Science — Washington University in St. Louis | Quantum Computing, Network, System Security exp. 2027
MS, Applied Computer Science — Southeast Missouri State University | GPA 4.0 | System Security, Blockchain, IoT 2025
BS, Computer Science — BRAC University, Bangladesh | Machine Learning & Deep Learning, Computer Vision 2021
Awards: Outstanding MS Graduate, Applied Computer Science (1 awarded per year); 2nd Place — Graduate Capstone Oral and Poster Presentations, 32nd Annual Student Research Conference, SEMO (2024)

TECHNICAL SKILLS

Languages: Python, Java, C++, SQL, HTML/CSS; **ML & Data:** PyTorch, TensorFlow, Keras, pandas, NumPy, SciPy, HDF5 — signal processing, peak detection, label aggregation; **Security & Systems:** Nmap, CVE analysis, Wireshark, Ethereum smart contracts; **Tools & Platforms:** Git / GitHub, Google Cloud, Firebase, MySQL, LaTeX, VS Code, Anaconda, Colab
Certifications: Google Cybersecurity — Foundations; Safe Play: Manage Security Risks; Connect and Protect: Networks and Network Security

EXPERIENCE

Graduate Research Assistant — VIBE Lab, Washington University in St. Louis Apr 2026 – Present

- Develop peak-detection methods for GC-MS chromatography under a **Waters Corporation**-funded grant (GR0042618), evaluated head-to-head against the company's production ApexTrack algorithm.
- Built a Python/SciPy/HDF5 pipeline to evaluate peak detection across 3222 chromatograms and 9807 annotated peaks, benchmarking ApexTrack and invented methods using precision, recall, and F1.
- Design visual analytics tooling that surfaces model uncertainty to analysts at decision time; accepted as a poster at IEEE VIS 2026.

Graduate Research Fellow — Jain Lab, Washington University in St. Louis Aug 2025 – Mar 2026

- Built a layered threat-analysis framework for quantum cryptographic protocols (QKD, QPKS, QDS) on grants from Qatar RDI (ARG01-0501-230053) and **Cisco** (98690499); first-author manuscript under review.
- Modeled physical, link, and network-layer attack surfaces to produce comparable resilience assessments across competing protocols.

Administrative Assistant — Dept. of Computer Science, Southeast Missouri State University Aug 2024 – May 2025

- Reviewed CS graduate admission applications, ran student orientations and onboarding, and handled communications with department leadership to keep daily administrative workflows running.

Mentored Summer Research — SPARK Lab, Southeast Missouri State University May – Aug 2024

- Built an automated vulnerability-inspection framework pairing Nmap scans with CVE feeds to audit distributed remote networks; published at CATA 2025 (Springer).
- Designed Ethereum smart-contract access control for P2P and IoT networks; published in Elsevier *Journal* and at ACMSE 2025.

Graduate Instructor — Dept. of Computer Science, Southeast Missouri State University Jan – May 2024

- Independently taught CS101 (Python) to 40 students — one of 12 graduate assistants selected to teach solo through competitive interview; designed the full assessment pipeline.

Career Ambassador — Office of the Career Services, Southeast Missouri State University Sept 2023 – Jan 2024

- Advised students on resumes and cover letters, compiled alumni employment records, and coordinated career fair logistics supporting departmental workforce-development goals.

Assistant Manager, IT (prev. IT Officer) — Dzins Myth Ltd., Dhaka, Bangladesh Mar 2022 – Jun 2023

- Migrated company data hosting to Google Cloud and implemented a disaster-recovery plan, cutting recovery time.
- Owned website deployment plus hardware, network, and access management for a 10-person office.

PUBLICATIONS & PEER REVIEW

- 10 peer-reviewed publications** (ACM, Springer Nature, Elsevier), **4 under-review**, **3 pre-prints**, **5 conference presentations**.
- Reviewer:** IEEE Transactions on Mobile Computing 2026, HICSS60, Journal of ETDE, CAINE2026 (PC Member), ACMSE2025 (Session Chair)

LEADERSHIP & SERVICE

Mentor, Code to PhD program for underrepresented CS applicants (2025); Member, AI Procurement Infrastructure Subcommittee & Annual Advisory Board, Southeast Missouri State University; First-Year Leadership Program (FYLP), Southeast Missouri State University

SELECTED PROJECTS

Label Aggregation Algorithm | Jan – May 2026; Python — label aggregation and algorithmic support for noisy multi-annotator signal data.
SPARK Adversarial Safety — adversarial stress-testing of humanoid safety filters under sensor noise and crowding (arXiv:2605.19009).
Cloud-Based To-Do List App | Aug – Oct 2024; Firebase Authentication, Firestore, Firebase Hosting, HTML, CSS, and JavaScript
Digital Food Restaurant | Feb – May 2021; Servlet, MySQL, MVC Architecture, Tomcat, Eclipse, Xampp, CSS, and JSP
Appointment Management System | Oct 2019 – Jan 2020; PHP, MySQL, Database, HTML, Xampp, Web API, Dr. Java