Jahid Hasan

515-735-1758 | Ames, IA | jhasan@iastate.edu | Jahid_Hasan Portfolio | Google Scholar

Education

Iowa State University — Iowa, USA

- **Ph.D. in Computer Science (STEM)** — Aug. 2021– Expected 2026
  - **Advisor:** Dr. Manojit Pramanik
- **MS in Computer Science (STEM)** — Aug. 2021–Dec. 2024
  - **Advisor:** Dr. Wensheng Zhang
  - **Dissertation** Multi-Server Oblivious RAM Approach for Secure Cloud Storage
- **MS in Entrepreneurship** (The Ivy College of Business: AACSB Accredited) — Jan. 2023–Dec. 2024

Nanjing University of Posts and Telecommunications — Nanjing, China

- **MEng in Information and Communication Engineering**, GPA: 3.85/4.00 — Sep. 2017–Jun. 2020
  - **Advisor:** Dr. Minghai Xu
  - **Dissertation:** Bulletproofs: A Non-Interactive Zero Knowledge Proof Protocol For Blockchain Security

Atish Dipankar University of Science and Technology — Dhaka, Bangladesh

- **BSc in Electrical and Electronic Engineering**, GPA: 3.90/4.00 — Jan. 2013–May 2017

Teaching Interests

- Operating Systems
- Database Management
- Computer Networking, Cryptography
- Data Science and Machine Learning

Relevant Skills

- **Software & Tools**: MS Excel, Tableau, GitHub/Perforce, JIRA, MongoDB/PostgreSQL, AWS, Linux, Tauri, Docker, Nmap, Wireshark, Packet Tracer, Canvas/Blackboard, Miro
- **Programming Languages**: Python (PyTorch, Tensorflow), C/C++, Java, Rust, R, SQL, Typescript, Javascript

Teaching Experiences

Teaching Assistant/Guest Lecturer — Aug. 2021 – Present

- **Department of Computer Science, Iowa State University** — *Ames, IA*
  - **Course:** COMS 5520: Principles of Operating Systems (Fall'24)
  - **Responsibilities:**
    - Facilitated graduate teaching in advanced OS concepts: process synchronization, deadlock analysis, and distributed systems
    - Guest lectured and mentored research projects on concurrency control, security mechanisms, and real-time OS
    - Conducted office hours, provided one-on-one guidance, and graded assignments
  - **Course:** COMS 3520: Introduction to Operating Systems (Spring'22, Fall'22, Spring'23, Spring'24, Fall'24, Spring'25)
  - **Responsibilities:**
    - Led and coordinated recitation classes for 140+ students per semester, fostering a 60% increase in student engagement through interactive platforms like Piazza and Slack
    - Guest lectured and mentored students to deepen their understanding of operating systems concepts, including xv6 OS projects (C programming), scheduling policies (MLFQ, RR, stride scheduler), multithreading, file systems, system calls, and encryption/decryption
    - Conducted office hours, provided one-on-one guidance, proctored exams, and graded assignments, contributing to a positive learning environment for all students

- **Course:** COM S 2520: Linux Operating Systems Essentials (Fall'21)
- **Responsibilities:**
  * Designed and delivered engaging lab activities for 140+ students in a hands-on Linux course, covering installation, administration, and advanced topics like kernel builds and package management
  * Assisted student learning through 14 projects covering dual boot systems, file permissions, process management, shell scripting, web server creation, network file sharing (NFS/Samba), and router configuration
  * Mentored students, facilitated communication through Piazza and contributed to their success by grading projects, exams, and assignments

Research Experience

Research Assistant (PhD Lab) Nov. 2024 – Present

- **Biomedical Imaging Laboratory (BILab)**, Iowa State University *Ames, IA*

- Developing deep learning frameworks for photoacoustic imaging to enhance clinical ultrasound image contrast

Research Assistant (MS Thesis) Feb. 2024 – Nov. 2024

- **Dr. Zhang Lab**, Iowa State University *Ames, IA*

- Developed a multi-server ORAM model using node-splitting and parallel processing to enhance performance and security in large-scale cloud storage systems
- Implemented double encryption (AES-GCM) and piece-wise eviction processing to enhance data confidentiality and access pattern privacy

Research Assistant (Visitor) Jun. 2022 - Aug. 2022

- **Data Storage Lab (DSL)**, Iowa State University *Ames, IA*

- Developed a configuration state builder tool that generated mke2fs configuration states based on its self-dependency (SD) and cross-parameter dependency (CPD), resulting in a 25% increase in the efficiency of generating configuration states
- Designed and programmed a parallel testing framework to test a total of 25 EXT4 image file systems, resulting in a 57.6% increase in testing efficiency and identifying and analyzing 35 dependency bugs

Professional Experience

Co-Founder Jan. 2025 – Present

- **Tometo, Inc. (Startup)** *Remote*

- Co-founded Tometo AI, designing and leading the development of a people-focused vertical AI engineering manager solutions to streamline engineering team operations and productivity by 10x; secured 150+ customer signups post-MVP
- Designed and built AI infrastructure, custom in-house integrations, collaborating with product, design, and engineering teams to shape a user-centric product roadmap and accelerate development

Project Manager May 2023 – Nov. 2024

- **BLÜ Games (Startup) – Title: Arcane Arena** *Remote*

- Implemented project management tools to streamline cross-functional team communication, collaboration, and task tracking for deliverables
- Strategically created agile methodologies to delegate tasks and track progress, achieving a 90% successful completion rate for game design projects
- Led the QA team in crafting and executing robust testing plans, insightful reporting, and efficient closure for timely releases

Technical Support Engineer Oct. 2019 – Jan. 2020

- **Shanghai Microsoft** *Shanghai, CN*

- Delivered technical support for Microsoft Office 365 products (SharePoint Online, OneDrive for Business, Azure) across the APGC region, resolving over 500 complex customer incidents and collaborating with product teams to drive feature enhancements and improve customer satisfaction
- Implemented a streamlined incident management system to facilitate issue tracking, analysis, and documentation, fostering team productivity by 50% and particularly reducing average resolution times

Software Engineer Intern Jun. 2019 – Oct. 2019

- **LNX Protocol** *Remote, ROK*

- Achieved a flawless 100% bug fix rate in 2 software engineering tasks, resolving 7 critical issues through A/B testing, regression, and CI/CD pipelines in Jenkins, leveraging GitHub for version control and collaboration
- Spearheaded the development and implementation of the world's first DAG-infused blockchain, resulting in a 50% increase in transaction query processing speed

Entrepreneurship/Leadership Experience

ISU I-Corps Fellow Mar. 2023 – Apr. 2023

- **Great Lakes I-Corps Hub** *Ames, IA*

- Conducted comprehensive customer discovery interviews to understand target market needs, pain points, and potential value propositions, leveraging insights to refine product-market fit
- Analyzed and evaluated rigorous hypothesis validation, rapidly iterating product strategies based on comprehensive customer discovery insights to optimize market fit

ISU Startup Factory Cohort 12 Fellow Aug. 2022 - Dec. 2022

- **ISU Pappajohn Center for Entrepreneurship** *Ames, IA*

- Developed and validated a comprehensive business model, including formulating a clear one-liner, value proposition, and commercial plan to present and pitch a viable startup idea effectively
- Demonstrated strong business acumen and leadership skills by executing customer discovery, market research, and financial planning tasks, culminating in creating a pitch deck and comprehensive commercialization strategy

Recent Projects

SwarmSync SDK | Python, OpenAI/Gemini API, Docker, MCP, Browser-use May 2025

- Building an open-source SwarmSync multi-agent that can do all tasks autonomously to streamline startups engineering teams. Visit:

NexusFM File Manager | Python, PyQt5, CLI, GUI, PyPI Sep. 2024

- Developed advanced cross-platform file management tool with dual CLI/GUI interface, featuring operations like hashing, permissions management, and content search. Visit: PyPI

IntelliParse SaaS Application | NextJS, TypeScript, Tailwind CSS, OpenAI/GEMINI API, Firebase Jul. 2024

- Developed IntelliParse to extract information and generate insights from any documents. Visit: Product Hunt

Financial Data Research Tool | Python, LangChain Feb. 2024

- Developed StrataQuant, a lightning-fast framework that facilitates real-time financial data analysis by 50%, empowering data-driven strategies for investments, stocks, equities, hedge funds, and asset management

Xv6 OS for RISC-V | C Programming Jan. 2022–Present

- Implemented and developed system calls for process management and file system access, utilizing MLFQ, RR scheduling, and multithreading principles

Volunteering/Mentoring Experience

Campus Strategist Sep. 2024 – Dec. 2024

- **Perplexity AI** *Hybrid*

- Led Perplexity AI's campus product growth marketing campaign, driving 600+ student signups through strategic events and partnerships, significantly expanding user acquisition and brand visibility in higher education

Mentor Feb. 2024 – Mar. 2024

- **DreamUniGuide** *Remote*

- Delivered and coached online lectures and provided individual guidance to diverse Bangladeshi students aspiring for data science and machine learning research in the USA

Volunteer Oct. 2023 – Dec. 2024

- Materials and Resource Department, **Ames Public Library** *Ames, USA*

- Maintained a well-organized library book collection, ensuring easy accessibility for patrons

Volunteer Sep. 2023 – Dec. 2024

- **Food at First, First Christian Church** *Ames, USA*

- Assisted in offering help and making a positive impact to feed people struggling with hunger and food insecurity

Publications

K. Mridha, **J. Hasan**, S. D, A. Ghosh. "Phishing URL Classification Analysis Using ANN Algorithm." *IEEE* 4^{th} *International Conference on Computing, Power and Communication Technologies (GUCON),* 2021, pp. 1-7. doi:10.1109/GUCON50781.2021.9573797

J. Hasan (2019). "Overview and Applications of Zero Knowledge Proof (ZKP)." *International Journal of Computer Science and Network (IJCSN),* Vol.8(5), pp.436-440. Retrieved from: Researchgate

J. Hasan, T. Karmaker, M. I. Ahmed (2019). "Mathematical Modeling and Simulation Based System Identification of Non-minimum Phase Electro-Hydraulic Servo (EHS) System." *International Journal of Engineering Research & Technology (IJERT),* Vol.8(09), pp.189-195. doi:10.17577/IJERTV8IS090063

Pre-Print Papers

J. Hasan. "Optimizing Large Language Models through Quantization: A Comparative Analysis of PTQ and QAT Techniques." arXiv preprint arXiv:2411.06084(2024). Link to Pre-Print

J. Hasan. "Security and Privacy Issues of Federated Learning." arXiv preprint arXiv:2307.12181 (2023). Link to Pre-Print

J. Hasan. "An Analysis of Bugs In Persistent Memory Application." arXiv preprint arXiv:2307.10493 (2023). Link to Pre-Print

Abstract/Poster

Jahid Hasan Manojit Pramanik. "Ascent+: Deep Learning for Precise Needle Tracking on Ultrasound Images Trained With Photoacoustic Ground Truth." IEEE ISBI 2025.

Services

Journal Reviewer:

- [2024] **IEEE Open Journal of the Computer Society**
- [2023] **IEEE Transactions on Neural Networks and Learning Systems**
- [2022] **IEEE Transactions on Information Forensics and Security**
- [2022] **Springer Nature: The International Journal of Information Security**

Media Coverage

Entrepreneurs Competition:

- [2022] Finalist at the **International Immigrant Entrepreneurs Summit**, Iowa, USA. News Article: **WeArelowa** and YouTube Link: **YouTube**

Affiliations

Organization Name: Finance Club/Student Member

Organization Name: MBA & Specialized Masters Association (MBASMA)/Student Member

Organization Name: Computer Science Graduate Student Organization (CSGSO)/Former Faculty Senator Officer

Accomplishments

- [2024] Received **Teaching Excellence Award**, Department of Computer Science, Iowa State University. Certificate
- [2023] **ISU National Science Foundation Innovation Corps (I-Corps) Program For Entrepreneurs** hosted by the **NSF I-Corps Hub: Great Lakes Region**, Certificate
- [2023] Awarded the International Scholar Business Graduate Scholarship at Ivy College of Business, ISU
- [2022-23] Former **Faculty Senator Officer** of the Computer Science Graduate Student Organization (CSGSO), ISU
- [2022] ISU Startup Factory Program For Entrepreneurs - Cohort 12 Fellow, **ISU Startup Factory/Research Park**
- [2021] Awarded the Graduate Teaching Assistantship position at Iowa State University
- [2017-20] Received NJUPT First Level Scholarship
- [2018-19] Received Nanjing Municipal Government International Student Scholarship Award

Selected Coursework

Ph.D. in Computer Science:

- COM S 511: Design and Analysis of Algorithms
- COM S 559: Security and Privacy in Cloud Computing
- COM S 561: Database Design, Management, and Research
- COM S 573: Machine Learning
- COM S 579: Natural Language Processing
- COM S 673: Advanced Topics in Machine Learning

Online Courses:

- TCM Security: Practical Ethical Hacking
- Complete CCNA (200-301) Master Class
- Wireshark: Packet Analysis and Ethical Hacking

References

Dr. Manojit Pramanik

Position: Northrop Grumman Associate Professor, Department of Electrical and Computer Engineering, Iowa State University
Email: mano@iastate.edu
Phone: (515)-294-3826

Dr. Wensheng Zhang

Position: Associate Professor, Department of Computer Science, Iowa State University
Email: wzhang@iastate.edu
Phone: (515)-294-2821

Dr. Ying Cai

Position: Associate Professor, Department of Computer Science, Iowa State University
Email: yingcai@iastate.edu
Phone: (515)-708-7340

Dr. Chenglin Miao

Position: Assistant Professor, Department of Computer Science, Iowa State University
Email: cmiao@iastate.edu