Ashfak Md Shibli

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Experience

- **Athlete Den LLC** — New York, USA
  Software Engineer — ***Full Time: 05/15/2023 - Current***, *Summer Intern: 05/30/2022 - 08/18/2022*
  - **Developing ML model & mobile application**: Leading development of patent-pending AI technology for the U.S. sports market, with nationwide impact potential. Implementing innovative mobile platform targeted for U.S. athletes and coaches, with planned commercialization in 2025.
  - **AI vision model on live camera feed and interactive social media**: Spearheading development of state-of-the-art activity detection system using advanced deep learning techniques, contributing to U.S. technological leadership in sports analytics. Developed sophisticated AI-based visualization system for athletic performance enhancement.
  - **Implemented and managing cloud dev-ops**: Executed server-side data handling using Google Cloud Platform to store and retrieve cloud data for the application. Continuously integrating, deploying and testing optimizations and features of the project
  - **Core decision making personnel for the company**: Interviewed candidates, suggested various technical and business decisions along with the CEO to advance the project through to commercialization.
- **Tennessee Technological University** — Tennessee, USA
  Graduate Teaching and Research Assistant — *08/23/2023 - 05/06/2024*
  - **SMS Phishing Detection Research**: Developed and defended thesis (May 7th 2024) on comprehensive SMS phishing detection system contributing to U.S. mobile security infrastructure. Key achievements:
    - Analyzed security issues in AI chatbots and recommended reinforcement of defensive policies
    - Created novel Smish Score (0-100) system enabling customizable threat detection thresholds
    - Analyzed 10+ distinct categories of SMS phishing patterns using public datasets
    - Conducted comparative analysis of detection methods including ChatGPT, Gemini AI, BERT models, and custom scoring
    - Generated comprehensive dataset incorporating URLs, VirusTotal scores, AI responses, and IP Quality Score data
    - Research outcomes: 1 published paper (IEEE ISDFS), 1 poster at prestigious IEEE S&P Conference (top 4% acceptance rate), and 2 manuscripts under review
  - **Paper Review and Research Collaboration**: Reviewed cybersecurity paper for ACM Conference on Data and Application Security and Privacy (CODASPY'24). Actively collaborating with MS advisor on extended research initiatives.
  - **Academic Leadership**: Instructed and managed laboratory sessions for CSC 2310 and CSC 1310, developing next generation of computer scientists through hands-on programming instruction and mentoring.
- **New Jersey Institute of Technology** — New Jersey, USA
  Graduate Research and Teaching Assistant — *09/04/2022 - 05/29/2023*
  - **Research project SIERRA**: Fixed bugs, generated report of static analysis project funded by NSF (#2106710, Collaborative Research: SHF: Medium: Precise Static Analysis of Event-based Systems).
  - **Dataset of Protected Health Information (PHI) leakage in applications**: Enhanced U.S. healthcare security through development of automated analysis systems for PHI protection. Implemented comprehensive STRIDE threat modeling for healthcare applications, contributing to national healthcare data security standards.
  - **Lab Instructor - CS 103**: Designed lab assignments, graded and solved problems for labs of computer science for business.
- **Samsung R&D Institute** — Bangladesh
  Lead Engineer, NC eXperience Group — *07/25/2018 - 08/24/2022*
  - **Samsung Family Hub app development**: Implemented secure layered API architecture for sensitive cloud data communication. Engineered robust database system with multi-threaded data integrity protection, reducing system crashes by 99%. Developed comprehensive error handling, notification systems, and data migration protocols while maintaining 13% test coverage for critical components.

- **Samsung Galaxy Buds Windows app development**: Architected secure communication protocols for firmware updates, implementing encrypted data transmission and Bluetooth security measures. Developed serialization protocols for secure byte stream handling, REST APIs for authenticated device communication, and secure FOTA (Firmware Over The Air) update system. Maintained 15% unit test coverage for security-critical features.
- **Member of Innovation Task Force**: Led technical innovation initiatives through creation of technology knowledge base with 120+ curated articles. Evaluated security implications in Patent DOI (document of innovation) reviews. Developed patent concept for emergency response system integrating secure wearable and AR/VR communication protocols.
- **Samsung Notes - automated bug analysis**: Engineered automated security and performance testing framework for desktop application, incorporating comprehensive logging of system vulnerabilities, I/O anomalies, and crash analytics. Implemented proactive threat detection system that significantly reduced security and performance incidents in production.

Education

- **Tennessee Technological University + New Jersey Institute of Technology** 2022-2024
  Master of Science, Computer Science GPA: 4.00/4.00 *09/04/2022 - 08/01/2024*
- **Chittagong University of Engineering and Technology** 2013-2017
  Bachelor of Science in Computer Science and Engineering; GPA: 3.53/4.00 *03/06/2013 - 11/09/2017*

Software Development Skills

- **Languages**: Swift, Python, C#, C++, PHP, JavaScript, SQL
- **Technologies**: Unix, NoSQL, MySQL, DevOps - Cloud Server Management, Google Cloud Platform, Firebase, Postman, Unit Tests
- **Tools**: CI/CD, JIRA, Confluence, Git, GitHub Project Management, Documentation

Publications and Presentations

- Poster: A. M. Shibli and M. M. A. Pritom, "Use of LLM-based Generative AI Chatbots for Smishing Attacks and Defenses", 2024 45th IEEE Symposium on Security and Privacy San Francisco, CA, May 20-23, 2024, Publication: https://sp2024.ieee-security.org/downloads/SP24-posters/sp24posters-final19.pdf, Acknowledged by Tennessee Tech on LinkedIn.
- A. M. Shibli, M. M. A. Pritom and M. Gupta,"AbuseGPT: Abuse of Generative AI ChatBots to Create Smishing Campaigns," 2024 12th International Symposium on Digital Forensics and Security (ISDFS), San Antonio, TX, USA, 2024, pp. 1-6, doi: 10.1109/ISDFS60797.2024.10527300
- S. M. Mostaq Hossain, S. Banik, T. Banik and A. M. Shibli, "Survey on Security Attacks in Connected and Autonomous Vehicular Systems," 2023 IEEE International Conference on Computing (ICOCO), Langkawi, Malaysia, 2023, pp. 295-300, doi: 10.1109/ICOCO59262.2023.10397929
- Shibli, A.M., Hoque, M.M., Alam, L. (2019). Developing a Vision-Based Driving Assistance System. In: Abraham, A., Dutta, P., Mandal, J., Bhattacharya, A., Dutta, S. (eds) Emerging Technologies in Data Mining and Information Security. Advances in Intelligent Systems and Computing, vol 755. Springer, Singapore. https://doi.org/10.1007/978-981-13-1951-8_71

Innovation and Intellectual Property

- **SYSTEM, APPARATUS, AND METHOD FOR ANALYZING SPORTS PERFORMANCE USING MULTI-MEDIA CONTENT**: Advancing U.S. sports technology through patent-pending AI-driven system (USPTO submission). Innovation focuses on U.S. market requirements with potential nationwide impact on athletic training and performance analysis. Led technical development and prior art analysis to strengthen patent position.

Volunteering

- **First Lego League**: Managed and inspired middle school student teams at the Lego League Robotics competition of Middle Tennessee Championship event at Tennessee Tech February 10, 2024.

Contributions to National Interest

- **Cybersecurity Research**: Advanced U.S. digital infrastructure protection through novel SMS phishing detection systems and security model development
- **Healthcare Security**: Enhanced protection of sensitive health information in U.S. healthcare applications through automated security analysis
- **Technology Innovation**: Developing patent-pending AI technology advancing U.S. leadership in sports analytics and training
- **Academic Impact**: Contributing to U.S. computer science education through research collaboration, instruction and mentoring of future cybersecurity professionals. Developed and delivered coursework in computer science fundamentals and security principles.

Awards

- **ICON of the month**: From Samsung R&D, twice in May 2019 and November 2020.
- **Outstanding Collaborator**: From Samsung R&D for contribution for the year 2021.
- **Best Paper**: At International Conference on Emerging Tech in Data Mining and Information Security, February 2018, presenting Vision-based Driving Assistance System research work.
- **Student of the Batch**: For best performance in Web Application Development course at BITM, Bangladesh on August 2016.