

MD JULFIKER ALI JEWEL

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🌐 Website 🌐 LinkedIn 🌐 Github

SKILLS

- Language Proficiency: C# | C++ | Java | Python
- Frameworks: PyTorch | TensorFlow | NumPy | Ruby on Rails | .NET
- Internet Technologies: HTML | CSS | Java script | PHP | UI/UX | MySQL | VBA
- Mainframe Technologies: JCL, COBOL, Natural
- Security Domains: IDS/IPS, vulnerability scanning, network traffic analysis, incident response
- Operating System: Windows | iOS | Linux
- Microsoft: Word | Excel | PowerPoint | MS Access
- Speaking Languages: English | Bengali | Hindi | Urdu

EMPLOYMENT EXPERIENCE

Software Programmer WV Dept. of Health and Human Resources (May 2024 to Present)

- Develop dynamic web applications using C# .NET, ASP.NET MVC, and SQL Server, optimizing data retrieval and performance.
- Collaborate with the Cybersecurity Analysis Team to perform advanced threat detection, system vulnerability assessments, and develop proactive incident response strategies to protect critical infrastructure and sensitive data.
- Enhance mainframe system operations by debugging and refactoring COBOL, JCL, and Natural (Software AG) programs.
- Design RESTful APIs and integrate cloud-based solutions to improve scalability and reliability.
- Work with Software AG Natural and Adabas to design and maintain business logic for mainframe-based systems.

Graduate Assistant (RA & TA) West Virginia State University (Jan. 2023 - Dec. 2024)

Department of Math & Computer Science

- Conduct research in AI/ML-driven cybersecurity at the Cybersecurity Innovation Center, focusing on detecting and defending against cyberattacks targeting critical infrastructure (e.g., phishing, ransomware, DDoS).
- Designed and developed intelligent control systems for robotic prosthetic upper limbs using 1D CNNs and embedded AI for real-time signal processing.
- Built predictive models for flood forecasting and groundwater level prediction using LSTM, BiLSTM, and GRU architectures.
- Contributed to research on multimodal large language models and their application in security and communication.
- Assisted in teaching undergraduate courses, including Data Structures, Software Engineering, and Database Management, providing lecture support, grading, and one-on-one tutoring.

IT Assistant - Intern WV Department of Transportation (May 2023 - Aug. 2023)

- Automated crash data analysis processes using C++ and VBA, reducing manual effort by 40%.
- Provided IT support and optimized system operations for traffic engineering software.

PROJECTS

- Developed a website on 'Scuba Diving in Hawaii' - Ruby on Rails - Awarded Best SE Course Project.
- Implement and explore linear and logistic regression methods to develop 'House Price' predictive model- ML.
- Implement and explore classification and dimensionality reduction methods to develop and evaluate the performance of expression regression- ML.
- Developed an AI-integrated mobile robotic arm platform for autonomous object detection, manipulation, and mobility using sensor fusion, computer vision, and embedded system control.
- Developed a simple Recurrent Neural Network (RNN) model to predict Google stock prices- ML.
- Implement and explore the dimensionality reduction (feature embedding) and unsupervised methods for clustering & visualization of input samples.

- Designed and implemented the Tower of Hanoi algorithm in Python with a graphical interface to demonstrate recursive problem-solving and algorithmic thinking.
- Quick Short Algorithm - Generate data, Shorting, Binary-search, Time efficiency.
- Designed interactive prototypes and click-through demos using Balsamiq in a Human-Computer Interaction project, emphasizing user-centered design, usability testing, and interface layout planning.
- Developed website on 'Ship booking management'.

EDUCATION

- **M.S. in Computer Science, GPA: 3.82/4.00;** West Virginia State University, USA; Dec. 2024
- **B.Sc. in Computer Science and Engineering;** Daffodil International University, Bangladesh

PUBLICATIONS

- "Reinforcing a Monitoring System of a Regulated River using LSTM" (ICAI'23 and CSCE'23)- Published in IEEE *Xplore*
- "Intelligent Upper Limbs Prosthetics with 1D Convolutional Neural Networks and Quick Training" (BIOENG'23 and CSCE'23 conferences)- Published in IEEE *Xplore*
- "Defending Characteristics and Attribution Analysis for Phishing Attacks"- (Presented: CSCI'23 conferences (CSCI-RTCW)- Published in IEEE *Xplore*
- "A Literature Survey and Analysis of Defending Cyber Attacks Targeting IoT in Critical Infrastructure" - (Presented: CSCI'23 conferences (CSCI-RTCW)- Published in IEEE *Xplore*
- "Analytical Study of Cybersecurity Attacks and Defenses Characteristics" - (Presented: CSCI'23 conferences(CSCI-RTCW)- Published in IEEE *Xplore*
- "Advancing AI: Exploring the Potentials of Multimodal Large Language Models" - Presented CSCI'24 CSCI24 - Published by Springer Nature.
- "Evaluating Advanced AI Models for Proactive Cybersecurity and Threat Detection" – Manuscript finalized and prepared for submission to a peer-reviewed conference.
- "AH-RF-SVM Based DDoS Detection for Cloud Computing" – Manuscript completed and prepared for submission to a peer-reviewed conference.

RESEARCH EXPERIENCE

- AI-Powered Intrusion Detection and Prevention System (IDS/IPS): Developing real-time cybersecurity defense models using ML/DL (Random Forest, LSTM, CNN) with SHAP-based explainability and Optuna tuning. (Ongoing)
- Multimodal Large Language Model Research: Exploring fusion of text, audio, and visual modalities for enhanced contextual understanding in AI systems.
- Cybersecurity in Critical Infrastructure: Investigated human-induced risks and cyberattack defense mechanisms (e.g., phishing, ransomware) using deep neural networks in critical infrastructure domains.
- Intelligent Flood Forecasting for Kanawha River Basin: Built a long-term, feedback-enabled flood prediction system using LSTM, BiLSTM, GRU, and ARIMA models.
- AI-Driven Robotic Prosthetic Limbs: Designed upper-limb prosthetics using 1D CNNs on embedded Coral Accelerator hardware with fast training via PyTorch and GPU-accelerated AI.
- Groundwater Level Prediction: Developed multivariate forecasting models for groundwater trends using LSTM, BiLSTM, GRU, and ARIMA.

PROFESSIONAL ACTIVITIES & ACHIEVEMENTS

- Technical Reviewer – Springer Nature, "CompTIA Network+ (N10-009) Certification Companion" – Reviewing all 14 chapters for technical accuracy in cybersecurity and networking (4 chapters completed, 10 chapters in progress). July 2025 – Present.
- Reviewer, IEEE PES ISGT-LATAM 2025, July 2025 (Peer-reviewed technical paper in the area of adaptive power system protection)
- Journal Reviewer, Business and Management Theory and Practice, Asia Pacific Academy of Science and PTE. LTD
- At the **CSCI'23** conference, presented on Critical Infrastructure in cybersecurity, covering topics such as Phishing detection, Defending attacks on IoT, & Characteristics of Attacks and Defenses.
- Presented an in-depth analysis on '*Phishing Cyber Attacks Characteristics and Attribution*' at 'SecureWV' conference in 2023

- Poster: Research Intelligent Upper-Limb Multifunctional Prostheses with EMG Pattern Recognition Control Method.
- Mentored undergraduate students in AI-driven prosthetic hand research, enhancing project and problem-solving skills- Summer Undergraduate Research Experience (SURE) program 2023
- Mentored undergraduate students in -AI in cyber security solving skills- ‘Summer Undergraduate Research Experience (SURE) program 2024
- Volunteer CS_for_all conference (*Memphis/2022*)

PROFESSIONAL MEMBERSHIPS

- ISC2 Candidate Member (Candidate ID: 1857749, 2025–2026) – Global cybersecurity professional community affiliation
- IEEE Graduate Student Member, in good standing through December 2025
- IEEE Young Professional Member, West Virginia Section (Member #99045875)
- ACM Member (Member #8684742), Association for Computing Machinery
- ROTRACT CLUB Bangladesh member, volunteer, awarded.

PROFESSIONAL TRAINING & CERTIFICATIONS

- Advanced Anti-Phishing – WVOT Cybersecurity, July 17, 2025
- 2025 Common Threats – WVOT Cybersecurity, July 16, 2025
- Danger Zone – WVOT Cybersecurity, July 16, 2025
- Data Protection – WVOT Cybersecurity, July 16, 2025
- A New Hire's Guide to Security Awareness – WVOT Cybersecurity, July 17, 2025
- 2025 Your Role: Internet Security and You – WVOT Cybersecurity, July 16, 2025
- Micro-module – Introduction to Ransomware – WVOT Cybersecurity, July 17, 2025
- 2025 Social Engineering Red Flags – WVOT Cybersecurity, July 16, 2025
- Google IT Support Professional Certificate – Coursera / Google, May 23, 2025
- Technical Support Fundamentals – Coursera / Google, May 23, 2025
- The Bits and Bytes of Computer Networking – Coursera / Google, May 23, 2025
- Operating Systems and You: Becoming a Power User – Coursera / Google, May 23, 2025
- System Administration and IT Infrastructure Services – Coursera / Google, May 23, 2025
- IT Security: Defense Against the Digital Dark Arts – Coursera / Google, May 23, 2025
- Federal Tax Information Training – FITX, July 12, 2025
- Linux: I/O Redirection for DevOps – Coursera Project Network, July 17, 2025
- Linux: Introduction to Shell Scripting for DevOps – Coursera Project Network, July 17, 2025
- Draw an Interactive Wireframe in Mockplus – Coursera Project Network, May 21, 2025
- Foundations of Cybersecurity – Coursera / Google, March 19, 2025
- Connect and Protect: Networks and Network Security – Coursera / Google, March 19, 2025
- Assets, Threats, and Vulnerabilities – Coursera / Google, March 20, 2025
- Automate Cybersecurity Tasks with Python – Coursera / Google, April 12, 2025
- Tools of the Trade: Linux and SQL – Coursera / Google, April 12, 2025
- Play It Safe: Manage Security Risks – Coursera / Google, March 19, 2025
- Put It to Work: Prepare for Cybersecurity Jobs – Coursera / Google, April 12, 2025
- Sound the Alarm: Detection and Response – Coursera / Google, April 12, 2025
- Artificial Intelligence Fundamentals – IBM SkillsBuild, September 8, 2024
- Cybersecurity Fundamentals – IBM SkillsBuild, September 26, 2023
- Getting Started with Enterprise Data Science – IBM, April 24, 2024
- Getting Started with Threat Intelligence and Hunting – IBM, September 16, 2023
- IBM Security Zero Trust Principles – IBM, September 21, 2023
- Software AG Certified Natural Associate – Software AG, August 14, 2024 (valid until August 14, 2026)
- Mobile Application Development – Android – BASIS Institute of Technology & Management (BITM), SEIP Program, August 24, 2019