Aarifah Ullah

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Software Engineer, Electrical Engineer, Cybersecurity Specialist, and Technical Project Manager

Results-oriented engineer with experience in project management. Skilled at overseeing complex projects, leading teams, and communicating effectively with stakeholders. Proficient in a range of programming languages and methodologies, with a proven track record of delivering high-quality results. Knowledge of AI, Machine Learning and NLP through coursework, projects, and research. Improved upon current software processes by over 150%.

Technical Skills

C | Python | Java | Linux | SQL | MySQL | SQLite | Microsoft Office Suite | ROS | Gazebo | MATLAB | TensorFlow | PyTorch | NLTK | scikit-learn | Flask | HTML5 | CSS | Assembly | R | Verilog| Bootstrap | Artificial Intelligence (AI) | Machine Learning (ML) | Large Language Models (LLM) | Autonomous Systems & Drones | Autopilots | Robotics | PID & Control Theory | Unity | Unreal Engine | IsaacSim | ROS 1 & ROS 2

Education

Accelerated Master of Science in Cybersecurity in Computer Science, George Washington University, Washington, DC (Expected Spring 2026)
Bachelor of Science in Electrical Engineering, George Washington University, Washington, DC (Expected December 2025)
Bachelor of Science in Computer Science, George Washington University, Washington, DC (Expected December 2025)

Relevant coursework: Digital Design with FPGAs | Analog Electronics | Digital Electronics | Communications Engineering | Control Systems Design | Digital Signal Processing | Circuit Theory | Electrical Energy Conversion | Microprocessors | Fields and Waves | Operating Systems | Algorithms | Usable Security | Network Security | Computer Networks I | Secure Computing Systems | Software Engineering | Database| Foundations of Computing | Systems Programming | Natural Language Understanding | Reinforcement Learning

Research Experience

George Washington University – Intelligent Aerospace Systems Lab | NASA / NSF / FAA, Washington, DC

Research Assistant – Autonomous Drone Delivery Systems **May 2025 – Present**

Developing landing and delivery procedures for autonomous UAV applications and real-world deployment.

- Investigating Machine Learning-based control systems for autonomous drone delivery and precision landing.
- Conducting simulations in Gazebo and ROS; integrating navigation, obstacle avoidance algorithms, and pose estimation techniques.

George Washington University – The Graph Lab, Washington, DC

Research Assistant – Cybersecurity and Graph Optimization **May 2025 – Present**

Conducting research on secure network architectures using graph theory and optimization algorithms

- Analyzing and optimizing network security architectures using graph theory and anomaly detection.
- Collaborating on publication drafting and analyzing traffic flow efficiency to find persistent threats.

Marymount University, Washington, DC

Research Assistant – Cybersecurity and Malware Analysis **May 2025 – Present**

Conducting research on malware analysis supported with agentic AI capabilities

- Modeling malicious actor behavior through agentic AI to improve enterprise-level systems' security posture

- Exploring latest AI and LLM capabilities with autonomous planning, goal-oriented behavior and high-level decision-making

Professional Experience

George Washington University, Washington, DC

Undergraduate Teaching Assistant **May 2025 – Present**

Led lab instruction and supported student learning in programming and system design

- Held weekly office hours to offer individualized academic support, clarify lecture material, and reinforce lab content.
- Worked with faculty and lab instructors to ensure smooth lab operations and timely feedback for students.

Undergraduate Learning Assistant **Aug 2024 – May 2025**

Supported students in introductory programming through mentorship and lab guidance

- Provided hands-on assistance in Digital Signal Processing (DSP) labs, with a focus on MATLAB-based algorithmic development and signal analysis
- Mentored over 20 students per semester, contributing to improved academic performance and confidence.

Securitas Critical Infrastructure Services, Dumfries VA

Security Officer **Mar 2025 – Present**

Spearheaded client asset protection through incident reporting and access control systems

- Support the protection of classified and sensitive information, by maintaining secure access procedures and ensuring compliance with all applicable information security regulations
- Monitor and regulate entry to restricted areas, enforce security protocols, and document daily activities and incident responses.

Inova Mount Vernon Hospital, Alexandria VA

Security Dispatcher and Security Officer **Dec 2024 – Mar 2025**

Coordinated hospital security operations, emergency response dispatch, and access control to ensure patient and staff safety

- Managed emergency response operations by dispatching security personnel to incidents promptly and decisively.
- Administered the hospital's electronic access control system, managed staff and visitor credentials, and enforced secure entry protocols across the facility.

Leadership Initiatives, Washington, DC

Business and Youth Development Intern (Dual Roles) **Jul 2019 – Mar 2021**

Developing landing and delivery procedures for autonomous UAV applications and real-world deployment.

- Conducted needs assessments, developed tailored improvement plans, and raised microgrant funding through community outreach initiatives.
- Improved client business operations by introducing fixed pricing models, redesigning advertisements, and enhancing customer communication strategies.
- Contributed to the design of neuroscience-focused educational programs by coordinating with medical professionals and translating advanced research into accessible student curriculum.
- Led national student outreach efforts, expanding program reach through high school engagement and collaboration with academic partners.

Academic Projects

George Washington University, Washington, DC

Project Manager, Raytheon's Autonomous Vehicle Competition Capstone **Apr 2024 – Present**

- Managed the $15,000 budget and integrated diverse subsystems into a fully functional autonomous aerial system, leading a team of 13 seniors.
- Directed all project phases from planning through testing, including early flight validations, documentation on GitHub, and delivery of key sponsor deliverables.
- Designed and rigorously tested algorithms, search patterns, and concepts using Gazebo, ROS, and physical drones.
- Developed autonomous flight mission software and optimized search algorithms, which directly led to Raytheon's Autonomous Vehicle Competition Most Innovative Design recognition and a special individual callout during the awards ceremony.
- Project nominated for the Pelton Design Award, recognizing the top five capstone projects in the George Washington University School of Engineering and Applied Science.

Docker Containers in UNIX, CSCI 3411 Operating Systems **Nov 2024 – Dec 2024**

- Created containers in xv6 environment with complete isolation from kernel resources and other containers, proving effective security measures to combat malicious processes.
- Successfully maintained multiple containers, each with resource limits and limited file space.

Research Paper, CSCI 4907 Natural Language Understanding **Nov 2024 – Dec 2024**

- Compared the capabilities of GPT-4 Turbo and LLaMA3 in refining conversational question answering (CQA) datasets.
- Applied standard Machine Learning (ML) and Natural Language Processing (NLP) libraries, including NLTK, scikit-learn, TensorFlow, and PyTorch.

Full-Stack Development, CSCI 2541W Database Systems **Jan 2023 – May 2023**

- Developed a university enterprise system with website and database using SQL, SQLite, Python, and Flask.
- Integrated security features and separate logins to ensure data protection and user authentication.
- Managed the project lifecycle, from requirement gathering to deployment, ensuring timely delivery and high-quality output, meeting 40 user stories.

Linux Shell in C, CSCI 3401 Systems Programming **Jan 2023 – May 2023**

- Programmed a shell in C capable of interpreting and executing Linux shell commands, optimizing shell performance through efficient code design and resource management.
- Implemented error handling and user interface elements to enhance shell usability.

Speaker System, ECE 2115 Engineering Electronics **Mar 2021 – Dec 2022**

- Designed and constructed an efficient speaker system, meeting rigorous specifications for minimal power consumption using MOSFETs.
- Ensured compliance with technical requirements and standards throughout the project development.
- Conducted thorough testing and troubleshooting to refine the circuit design for optimal audio quality.

Awards | Certifications | Languages

- **Honors,** Dean's List (Spring 2024) (Fall 2024)
- **Presidential Academic Scholarship**, 3.33 GPA
- **Raytheon's Autonomous Vehicle Competition Most Innovative Design Award,** (2024 – 2025)
- **FAA Certified Remote Pilot**, June 2024 – June 2026
- **Certified in Cybersecurity,** June 2025 – June 2027
- **Active Interim Secret Clearance**