MD TAJUL ISLAM   Google Scholar Profile
816-529-3114   ResearchGate Profile
taj.tapu@gmail.com   LinkedIn Profile
Website   GitHub Profile

QUALIFICATIONS SUMMARY

- 8+ years of total experience in the field of computer networking, communication systems, & computer science.
- 5+ years of academic experience as a Graduate Teaching Assistant & Instructor in the University.
- A System Test Engineer with more than 6 years of industry expertise and experience in system validation, requirements analysis, software validation, vehicle infotainment and telematics system testing, cellular device testing, process optimization, product launch support, design verification, and quality assurance.
- Experience in Python, MATLAB, and good knowledge of JAVA, C, C++, and Linux/Unix.
- Strong build automation and continuous integration support experience in development models with working capability in software development (Agile), software configuration management (DevOps), process maintenance, and product life cycle management (CICD).
- Practical experience as a software build, release, and version control (Git, Subversion) engineer at Samsung Electronics.
- Solid experience in static analysis, functionality testing, binary preparation, and open-source license verification processes
- Ability to work independently or in a team with strong communication skills (oral and writing)
- Proven ability to work with people of diversified backgrounds, deliver results, optimize systems, and test engineering. Intrigued by complex engineering problems and different approaches to them with concise decision-making for problem-solving.

TECHNICAL SKILLS

- **Programming Languages:** C/C++, JAVA and Python.
- **Network Protocols:** TCP/IP, HTTP, FTP, UDP, DHCP, DNS, SDN, NFV, OSPF, RIPv2, BGP, EIGRP, OpenDayLight, MPLS, RIP, OpenFlow, SIP, Ethernet, CAN
- **Tools:** MATLAB, Packet Tracer, Wireshark, Microsoft Visual Studio, NS3, CPLEX, Mininet, PSpice, LabVIEW, CST Microwave Studio, Ekahau's Wi-fi Survey, Cisco Prime Infrastructure, Splunk, OPNET, Putty, GENI, Cisco Wireless Controller, AWS, Docker, QXDM, QCAT, PCAT, Text Analysis Tool, VSpy
- **Repository/Version Control Systems:** Perforce, Subversion, Git
- **Build Systems:** Jenkins/Hudson, E-Cloud, Quick Build
- **Industry Experiences:** Static Analysis, Open-source License Verification, Software Build and Release System, Version Control, Product life cycle Management (PLM), SDLC, STLC, Continuous Integration, Software Configuration Management, Product Binary Preparation, Development Operation (DevOps), Regression Test, Functional Validation
- **Certification:** Design for Six Sigma – Green Belt

PROFESSIONAL EXPERIENCE

Validation and Integration Engineer
General Motors, Warren, MI
Jan 2024 – Present
- Help test/validate debug Linux / Android services which run on the in-vehicle and on cloud.
- Interact and implement functional interfaces for all the electronic control units (ECUs) on the vehicle
- Validate services that connect to 5G / MEC Edge compute, Cloud and corporate data centers.
- Implement new vehicle services that support new features in the vehicle, support the UI / App teams implementing new features with SDV functional interfaces.
- Conduct performance test and validate new SDV / Ultifi vehicle services that become the foundation for engineers across General Motors for developing vehicle content.
- Plan, define and execute In-Vehicle App and cloud validation execution to ensure flawless App launch.
- Review Back-Office requirements (i.e. Stories/Narratives) and create/modify test strategy, test plan and test scripts.
- Develop validation designs to manual and automation test procedures.
- Perform risk assessment and come up with a risk mitigation plan/strategy to meet tight deadlines.

Cellular Wireless Test Engineer
General Motors, Warren, MI
Dec 2021 – Dec 2023
- Responsible for executing the core Cellular Wireless connectivity features validation including functional, non- functional, new feature, End to End and stability testing for GM Infotainment/Telematics devices.
- Responsible to execute wireless function/applications tests (Handovers, Acquisition, Modem configuration, Carrier Aggregation, Physical SMS, call) for the pre-production modules for different regions (North America, Europe, China, Mexico) in live network and lab environment using network simulators CMW 500, CMW Flex, CMX, Anritsu.
- Analyzed telematics unit logs to identify potential failures in wireless cellular functionality using QUALCOMM tools like QXDM, QCAT, QPST & industry standard tools like Wireshark to identify and debug related issues and root cause.
- Worked with Calibrations and Vehicle Serial Data Communication like CAN, Ethernet for identifying abnormalities related to vehicle connectivity and infotainment systems.
- Working closely with product requirement and development teams during the entire global vehicle development program and identifying critical failures with internal and external cross-functional teams.
- Supported product design reviews for GM and Supplier stakeholders as well as ensuring supplier test readiness, results, and failures during entire program development life cycle.
- Collaborated with suppliers for issue reproduction and root cause analysis of infotainment and connectivity functionality.

VoLTE/VoNR/IMS Test Engineer
Fujitsu Network Communications, Dallas, TX
Sep 2021 – Dec 2021
- Performed service validation of different data and voice services using wireless devices in production environment against 5G, LTE and IMS core infrastructure.
- Responsible for e-2-e service testing, Sanity Testing, Regression Testing, Execution of network deployment in identified markets and network, Network validation of EPC/IMS call flows for different services.

- Carried out packet analysis for VoLTE core network and IMS network Protocols & Interfaces using tracing tools
- Collaborated with the architect team for ensuring the correct call flow and documented the discrepancies or issues.

SQA Analyst
Samsung Electronics America, Plano, TX
Dec 2020 – Sep 2021
- Responsible for executing field test activities for projects under development by protocol testing and providing log analysis, issue debugging, and verification based on network operator's requirements, Samsung specifications and telecommunication standards like 3gpp and 3gpp2 technical specifications
- Discovered any abnormal behaviors when software and hardware handovers are performed.
- Performed test cases for technologies like CDMA2000, WCDMA, GSM, LTE, VoLTE, 5G NSA/SA (Sub6, mmW) for modem software for different US carriers (ATT, TMO, VZW, USCC)
- Identified the complex test cases and prepared the Business & Build Verification Testing. Implement QA technique for test case optimization. Execute the test cases and log the defects to track and verify software fixes.
- Executed Tests on High Power User Equipment (HPUE), Carrier Aggregation, MIMO for testing Network Performance of Samsung devices; Use iPerf, Datum for network throughput (HTTP, UDP, TCP, FTP, PING, and Web browsing); Collecting AP, CP, TCP Dump, and IMS logs.
- Performed Regression Testing, Sanity testing, Performance Testing, and User Acceptance Testing in new development models to minimize bugs for ship approval to network carriers and analyzed logs in QXDM and QCAT for testing standards/troubleshooting when bugs are detected.

Graduate Assistant/Course Instructor
University of Missouri-Kansas City, Kansas City, MO
Aug 2015 – Dec 2020
- Introductory Networking and Application (Undergrad Course): Taught this individual course regarding TCP/IP layer and protocols, Network Protocols for different Wireless and Mobile Network, Network Security etc.
- Network Architecture (Graduate Course): Helped students with their assignments and final projects related to network traffic data through Wireshark, socket programming, developing web server for http request etc.
- Electrical Circuit I and II lab: Taught this laboratory course related to electrical active and passive circuit components, verification of circuit theory, LabView, Oscilloscope, Sensors, transformer, active and passive filter, two port networks.
- Worked on planning, installation, managing, site survey, upgradation for campus Wi-Fi and fiber network
- Conducted research on optimized management of wireless networks, software-defined networking, and machine-learning applications in wireless communications.

Sr. Software Engineer
Samsung R&D Institute Bangladesh (SRBD), Dhaka, Bangladesh
Jan 2012 – June 2015
- Performed 500+ wireless handset binary preparing, release & Functionality Test, version control and according to build configuration per year.
- Performed 50+ project static analysis by using different static analysis tools like klocwork, Prevent, Parasoft etc.
- Worked on and completed 30+ project's open-source license verification by Black Duck Protex
- Worked closely with project lead for product life cycle management, issue management, testing management and software development of wireless handset.
- Worked as an configuration controller for the Software Configuration Management team.

- Conducted Release, Version Control, Basic Functionality Test, Binary preparation, Prepared and released FOTA Package, SMD and HOME Binary
- Worked on build automation and continuous integration using Quick Build, E-Cloud and Jenkins (Hudson)

EDUCATION

- **Doctor of Philosophy in Computer Science**   **Expected May 2025**
  University of Missouri-Kansas City, MO, USA (CGPA 3.67/4.0)

- **Master of Science in Computer Science**   **May 2019**
  University of Missouri-Kansas City, MO, USA (CGPA 3.65/4.0)

- **Bachelor of Science in Electronics and Communication Engineering**   **May 2011**
  Khulna University of Engineering and Technology (KUET), Bangladesh (CGPA 3.67/4.0)

PUBLICATION LIST

Journal Publications:
- Mukherjee, Shubhabrata; Choi, Taesang; **Islam, Md Tajul**; Choi, Baek-Young; Beard, Cory; Ho Won, Seuck; and Song, Sejun. (2020) "A Supervised Learning-based Spatial Performance Prediction (SLPP) Framework for Heterogeneous Communication Networks." *ETRI Journal, volume 42, issue 5, page 686-699*. Electronics and Telecommunication Research Institute, 2020.
- Rahman, Md. Tawabur; Islam, Muhammad Mainul; and **Islam, Md. Tajul**. (2014) "High Frequency Performance of Dual Gated Large Area Graphene MOSFET." *International Journal of Computational Engineering Research (IJCER), volume 4, issue 6, page 72-79*. IJCER Publications, 2014.
- Al Mobin, A. M. Numan; Islam, Mobarakol; Rana, Md. Rihab; Rana, Md. Masud; Dhar, Kaustubh; **Islam, Md. Tajul**; Haque, Md. Rezwanul; and Hossain, Md. Moswer. 2011) "Backpropagation with Vector Chaotic Learning Rate." *International Journal of Advanced Computer Science and Applications (IJACSA), volume 42, issue 5, page 88-93*. The Science and Information (SAI) Organization, 2011.

Conference Publications:
- **Islam, Md Tajul**, and Choi, Baek-Young. (2019) "Jointly Maximizing Throughput and Utilization for Dense Enterprise WLANs." *2019 IEEE International Smart Cities Conference (ISC2), page 753-759*. Institute of Electrical and Electronics Engineers, 2019.
- Gebre-Amlak, Haymanot; **Islam, Md Tajul**; Cummins, Daniel; Al Mansoori, Mohammed' and Choi, Baek-Young. (2018) "Protocol Heterogeneity Issues of Incremental High-Density Wi-Fi Deployment." *Wired/Wireless Internet Communications: 16th IFIP WG 6.2 International Conference, 2018, Proceedings, page 159-170*. Springer International Publishing, 2018.
- Rahman, Md. Tawabur; Roy, Ashish Kumar; Bhuiyan, Hossain Md. Abu Reza; **Islam, Md. Tajul**; and Bhuiyan, Ashraful G. (2014) "DC Characteristics of Dual Gated Large Area Graphene MOSFET." *2013 International Conference on Electrical Information and Communication Technology (EICT), page 1-6*. Institute of Electrical and Electronics Engineers, 2014.
- **Islam, Md. Tajul**; Hossain, Md. Liton; Kabir, Md. Ahasan; Rahman, Md. Tawabur; Salekin, Shirazus; Alam, Sk. Shariful; and Mitul, Abu Farzan. (2013) "Vertical Handover Decision Using Fuzzy Logic in a Heterogeneous Environment." *2013 International Conference on Informatics, Electronics and Vision (ICIEV), page 1-3*. Institute of Electrical and Electronics Engineers, 2013.

- Kabir, Md. Ahasan; Khan, M. A. Masud; **Islam, Md. Tajul**; Hossain, Md. Liton; Mitul, Abu Farzan. (2013) "Image Compression Using Lifting Based Wavelet Transform Coupled with SPIHT Algorithm." *2013 International Conference on Informatics, Electronics and Vision (ICIEV), page 1-4*. Institute of Electrical and Electronics Engineers, 2013.

OTHER RESEARCH ACTIVITIES

- Student Volunteer for ICC 2018, Joint 7th N2Women-WICE Workshop (co-located with IEEE ICC'18) and ISC2 2018
- Student Member of Association of Federal Communications Consulting Engineers (AFCCE)
- Reviewer of Springer Journal of Telecommunication Systems
- Reviewer of Wireless Days'19
- Reviewer of IEEE Access Journal
- Reviewer of ETRI Journal
- Reviewer of IEEE Internet of Things Journal
- Reviewer of IEEE Conference of Network Softwarization 2019

WORKSHOPS, POSTERS & TRAININGS

- Participant of the $7^{th}-12^{th}$ Central Area Networking and Security (CANSec) Workshop
- Poster Presentation at 11th Central Area Networking and Security (CANSec) Workshop 2017 in Rolla, MO
- Poster Presentation on UMKC SGS Community of Scholars Program 2018
- Attended and certified on Python Code Sprint 2015, jointly organized by Bangladesh Computer Council (BCC) and Bangladesh Open Source Network (BdOSN)
- Attended industrial training program on Space Research and Remote Sensing Organization (SPARRSO), Bangladesh Betar (Jessore) etc. as an academic requirement in undergrad.

HONORS, AWARDS, OTHER SPECIAL RECOGNITION

- SGS Student Travel Grant in 2023
- Balaji Travel Grant in 2023
- Awarded Preparing Future Faculty (PFF) Scholar Award Fellowship for 2019-20 by School of Graduate Studied, UMKC
- Honored as an Graduate Research Assistant and Teaching Assistant by UMKC
- Doctoral Fellowship as recognition of the contributions in research program
- Travel grant from the National Science Foundation (NFS), USA to attend the 8th,9th, 10th 11th and 12th CANSec workshop throughout 2015 to 2018
- Received scholarships from the Government of Bangladesh for outstanding performance in competitive exams from the elementary school level till completing bachelor's degree
- Achieved University Technical Scholarship throughout the 4 years of B.Sc. for outstanding performance in education
- Award winner for district level Volleyball championship and Inter-Hall championship
- Achieved scholarship in 5th and 8th grade with special recognition in Talent Pool Scholarship program by Board of Intermediate and Secondary Education in 1998 and 2001 respectively.