

# Md Asef Jawad

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## EDUCATION

### Master of Network Technology

*Carleton University*

Ottawa, ON

Sept 2023 – April 2026

### Bachelor of Computer Science

*Dalhousie University*

Halifax, NS

Jan 2020 – May 2022

## HIGHLIGHTS OF QUALIFICATION

- Proficient in programming languages including C++, Java, and Python, with strong foundations in object-oriented design, data structures, algorithms, and applied programming through academic and project-based work.
- Knowledgeable in Agile methodologies, including sprint, iterative development, and test-driven development.
- Skilled in software testing practices such as unit testing, regression testing, and integration testing.
- Hands-on experience in machine learning and AI, with implementation of algorithms including SVM, Decision Tree, Random Forest, Naive Bayes, K-Nearest Neighbors (KNN), K-Means Clustering, and Linear Regression.
- Knowledge of ML pipelines involving data preprocessing, feature engineering, model training, evaluation, and optimization, with experience improving model accuracy through iterative refinement and validation techniques.
- Strong analytical and problem-solving abilities, with experience working on real-world datasets and evaluating model performance using accuracy, precision, recall, F1-score, and confusion matrices.
- Experienced in software development workflows, including application design, debugging, version control (Git), and API integration.

## TECHNICAL AND SOFT SKILLS

**Languages:** Java, Python, C/C++, SQL, JavaScript, HTML/CSS, R

**Scripting:** Bash, Python

**Microsoft O365:** Word, PowerPoint, SharePoint, Outlook, Survey, OneDrive, Excel

**Protocols :** DHCP (DORA), ARP, IGMP, DNS, SNMP, RIP, HTTP, UDP, EAPOL, 802.11 etc.

**Communication:** Teams, Cisco WebEx, JIRA, Confluence

**Soft Skills :** Independent, Team-Player, Micro-management, Problem-Solving

## PROFESSIONAL EXPERIENCE

### Junior Software Developer in Test

Sep 2023 – Dec 2023

Toronto, ON

*Taxtron Inc*

- Proficient in C++, Java, and Python, with strong foundations in object-oriented design, data structures, algorithms, and developing optimized, scalable software solutions.
- Developed and executed Python-based automated test scripts within existing automation infrastructures to improve testing efficiency and reliability.
- Designed and developed comprehensive test plans and test cases following Agile methodology; experienced in **Blackbox/Whitebox** testing, **Unit** Testing (Java-IntelliJ), **Regression** Testing, and **Manual** Case Execution.
- Set up environments and test configurations to replicate real-world network conditions, validate system behavior, and ensure robustness under load, stress, and **KPI** performance scenarios.
- Utilized traffic generation and network analysis tools such as **Ixia** and CMD for performance, load, and stress testing across distributed systems.
- Hands-on experience with machine learning workflows, including data preprocessing, feature engineering, model training, evaluation, and optimization using algorithms such as SVM, Decision Tree, Random Forest, Naive Bayes, KNN, K-Means Clustering, and Linear Regression.
- Executed manual and automated test cases, collected artifacts, analyzed logs, and reported results using **Jira** to ensure full traceability to requirements and specifications.
- Collaborated closely with R&D, QA, and development teams to debug, isolate, and resolve software and networking issues and reduce defect turnaround time, and improve product stability.
- Reviewed system requirements, technical specifications, and customer documentation to ensure accuracy, completeness, and alignment with functional behavior across integrated systems.

<b>Network Specialist</b>	Jan 2023 – June 2023
<i>Bell Canada</i>	<i>Ottawa, ON</i>
<ul style="list-style-type: none"> <li>• SSH into different types of modems and configured various parameters in the TR-181 (TR-69) data model for different QA testing in both Wired and Wireless regression.</li> <li>• Hands-on experience working with <b>DHCP (DORA)</b>, <b>ARP</b>, <b>IGMP membership join/leave for multicast</b>, <b>802.11 Broadcast Beacon frames</b>, <b>EAPOL</b>, <b>QoS DSCP mapping</b>.</li> <li>• Configured UPnP Port Forwarding rule manually from Modem UI and verified that there's a port forwarding rule for connected devices so it can contact the main CSMF server.</li> <li>• Collected traces for a bug and investigated modem logs and system logs for the reason of the bug, and got OTA captures in different frequency channels to grab the root cause.</li> <li>• Managed inventory of IT assets, handled e-waste processes, and maintained accurate tracking of equipment.</li> <li>• Installed and troubleshoot end-user hardware, including printers, scanners, label makers, and peripheral devices.</li> <li>• Configured L2/L3 switch for port mirroring ports to grab bugs from a connected device on another port.</li> <li>• Bash Scripted a program to find a bug in user 'Merlin STBs' across the country to identify the bug and fix it with a suitable replacement solution to prevent the STBs from behaving differently.</li> <li>• Did <b>Wi-Fi interference and bandwidth testing</b> for Radio 2.4 GHz, 5 GHz, and 6 GHz on various APs Wi-Fi channels and monitored if IPTV service was not impacted due to heavy traffic.</li> <li>• Did <b>Wireshark</b> Packet Analysis and <b>tcpdump</b> on modem LAN/WAN side for packet analysis.</li> </ul>	
<b>Technical Support Assistant</b>	June 2022 – Dec 2022
<i>Calcoder Inc</i>	
<ul style="list-style-type: none"> <li>• Executed regular on-site and cloud-based backups, verified data integrity, and managed restoration processes.</li> <li>• Supported Microsoft Server, Exchange, and Office 365 environments, including user management and tasks.</li> <li>• Collaborated with internal teams and clients to implement system updates, troubleshoot complex issues, and maintain accurate documentation.</li> <li>• Assisted in full network and phone system cutovers, including project planning, customer coordination, and post-installation validation.</li> </ul>	
<b>PROJECTS</b>	
<ul style="list-style-type: none"> <li>• <b>Federated Learning for IoT Network Security</b> Implemented a distributed intrusion detection framework using federated learning to protect edge IoT devices without centralized data storage. Used Python, TensorFlow, and MQTT protocols to train lightweight anomaly detection models across multiple IoT nodes while preserving data privacy.</li> <li>• <b>AI-Assisted Network Traffic Classification using SDN</b> Created a deep learning model to classify encrypted and unencrypted traffic in SDN environments using flow-based features. Integrated Mininet and OpenFlow controllers to capture datasets and used CNN and LSTM models in Python for traffic pattern recognition and DDoS detection.</li> <li>• <b>Digital Twin for Predictive Maintenance in Data Centers</b> Developed a digital twin model representing virtual replicas of data center servers to forecast failures using machine learning. Collected telemetry from simulated SDN environments and applied regression-based time-series prediction to optimize maintenance scheduling and minimize downtime.</li> </ul>	
<b>CERTIFICATIONS</b>	
<ul style="list-style-type: none"> <li>• Microsoft Certified: Azure Fundamentals – Microsoft, Apr 2024</li> <li>• AWS Academy Cloud Foundations – Amazon Web Services (AWS), Apr 2024</li> <li>• AI For Everyone – DeepLearning.AI, Nov 2023</li> <li>• Introduction to Cybersecurity – Cisco, Sep 2023</li> <li>• Google Cybersecurity Certificate – Google, Sep 2023</li> <li>• Networking Basics – Google, Jul 2023</li> <li>• Security, Compliance, and Identity Fundamentals – Microsoft, Jun 2023</li> <li>• Foundations of Cybersecurity – Google, Jun 2023</li> <li>• Operating Systems and You – Google, May 2023</li> <li>• Technical Support Fundamentals – Google, May 2023</li> <li>• Intro to Cybersecurity Tools and Attacks – IBM, Apr 2023</li> </ul>	