# Wei (Savina) Liu

## Senior Quality Engineer in Big Data

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Experienced IT professional with over 20 years in software quality engineering and strong developer background, including roles at leading enterprises such as Broadcom and Oracle. Specialized in **9+** years of hands-on **data quality testing** cross **cloud-based data pipelines, data warehouse applications**, and **Big Data ecosystems**. Demonstrated expertise in validating **large-scale distributed systems on AWS** using technologies such as **Spark, Hadoop, Kafka, SQL, NoSQL**, **Python, Robot, Bash, Linux** to ensure data accuracy and reliability. Skilled in **designing automated validation frameworks across complex ETL** layers and collaborating closely with data engineers to deliver robust, high-integrity analytics solutions.

## SUMMARY OF QUALIFICATIONS

- **9+ years of experience** in data quality testing, including functional, integration, regression, and performance testing for enterprise-scale **Big Data** and **data warehouse** platforms
- Build and optimized Python-based automation frameworks for Big Data ETL and API validating **1,000+ nightly** on Linux using **Robot Framework**
- **6+ years of experience** validating distributed **Big Data pipelines** on **AWS Cloud** (EMR, EC2, S3) using **Hadoop**, **Kafka (MSK)**, **Spark**, and **Hbase, REST API**  for Symantec email security .Cloud at Broadcom Inc.
- **2+ years of hands-on experience** with testing multi-layered Star schema-based **data warehouse pipelines** on **Azure Cloud**, including Oracle, Azure Synapse, Databricks, Snowflake, ADF, and ADLS at IMCO
- Strong in **SQL**, backend validation, and source to target reconciliation
- Extensively tested **REST API/Web services** and **backend validations** using **SQL**, **Linux Bash**
- 7+ years  in automation using **Python**, **Robot Framework, Bash**; familiar with JavaScript, Java and C++
- Domain expertise in CRM/IVR, **Finance**, Cyber Security, AI/ML
- Proficient in CD/CD, Docker, Azure Devops, GitHub, JIRA and Confluence

## PROFESSIONAL EXPERIENCE

| Company | Position | Location | Date |
| --- | --- | --- | --- |
| IMCO  (Investment Management Corporation of Ontario) | QA Data Lead | Toronto, ON | May 2023 - Present |
| Paravision | Sr. SDET | Remote | Apr 2022 – Oct 2022 |
| Broadcom Inc. | R &D SW Quality Engineer 3 | North York, ON | Oct 2010 - Dec 2021 |
| Rogers Communication Inc. | System Functional Test Lead | Brampton, ON | Jan 2009 – Oct 2010 |
| Openlane | QA Performance Engineer | Toronto, ON | May 2008 – Nov 2008 |

| Oracle Corporation. | Quality Assurance Engineer | Beijing, China | Aug 2006 – Apr 2008 |
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| Yongyou Network Technology | Software Developer in JAVA Quality Control Specialist | Beijing, China | Apr 2002 – May 2005 |
| East Netscape Network Technology Co. Ltd | Web Developer | Beijing, China | 1997 - 2001 |

## EXPERIENCE

### 2023 – Present **IMCO (Investment Management Company of Ontario)**| *Data QA Lead*

Acted as QA gatekeeper to production for IMCO's enterprise Azure-based data platform initiatives. Led the test automation strategy, implemented Python-based validation frameworks, and drove quality assurance across the full development lifecycle for business-critical data migration and analytics pipelines.

- Built a robust end-to-end QA automation framework using **Python, PySpark, SQL, Pandas**, and **Robot Framework** in **Databricks** to validate data integrity, schema consistency, and data catalog across multiple ingestion and transformation layers
- Created QA notebooks to validate data migration between IDP 1.0 and IDP 2.0, ensuring synchronization in **Azure Synapse** via **automated reconciliation** and schema validation
- Executed comprehensive manual and automated testing strategies across **Azure Cloud**, covering **Medallion architecture**, **Dimension Type 1/2 tables**, **Fact tables**, and **STAR schema** implementations
- Collaborated closely with data engineering teams to validate data transformations in **ADF**, **Snowflake**, and **Databricks**, including automated **CDC (Change Data Capture)**
- Drove Agile QA processes with clearly defined **Test Strategy**, **Test Matrix**, and **Completion Reports** to measure test coverage and readiness for production
- Partnered with project managers and external vendors to define **UAT acceptance criteria**, host daily UAT standups, and resolve delivery blockers quickly and collaboratively
- Led 4 engineers turning around a delayed cloud migration project to deliver a critical release in just 6 weeks

Technology: Azure Cloud, Synapse, ADF, ADLS, Databricks, Snowflake, Oracle, Python, PySpark, Complex SQL, Robot Framework, MS Devops

### 2022 – 2022 **Paravision** | *Sr Software Development Engineer in Test*

Paravision is an AI/ML & Computer vision software company. The accuracy detection of face recognition 1: N is **ranking #1 in NIST**.

- Designed and implemented an end-to-end **test automation framework** to improve QA efficiency for Docker-based ML applications
- Automated test execution and reporting for **C++ SDKs** using **GoogleTest** and **Robot Framework**
- Led a team of 4 engineers to deliver critical automated test coverage for a major production release

- Conducted large-scale benchmarking and data validation for model output using Python and Linux tools
- Collaborated with stakeholders to define test plans, perform CI integration, and support release readiness

Technologies: GCP, Python, C++, Robot, GoogleTest, Docker, ML, Github, Linux

## 2010 – 2021 **Broadcom Inc** |
## Symantec Enterprise Cloud Department | *R&D SW Quality Engineer 3*

- Designed and implemented a Python-based test automation framework for a distributed **Big Data ETL and API platform**, now running 1,000+ nightly test cases
- Developed core test libraries for **Kafka message validation** and implemented end to end **data accuracy validation cross source, streaming pipeline, REST API**
- Wrote complex SQLs queries to assist in troubleshooting
- Conducted **failover and recovery testing** to detect data duplication or loss in large-scale processing flows
- Maintained AWS-based test environments using **Ansible**, and integrated automation into **Jenkins CI/CD pipelines**
- Provided test estimate to manager, contributed to test plan and test case documents
- Collaborated across global QA teams to manage regression coverage, test planning, and defect lifecycle in **JIRA and Confluence**

**Project Highlights**: Email Security. Cloud NDF Big Data Processing Application / API

NDF application includes data ETL and API server, which offers comprehensive Email threat intelligence data that Email Security. Cloud scans. In production, over 200+ mail towers sent different meta data to this application. Data was unified, cleaned, consolidated through Kafka cluster and Spark jobs, then stored in data lake. Customers retrieved the data in near real-time through an API server. The extracted data was returned in JSON format. This provided customers the reports and dashboards across multiple services.

Technologies: AWS (EC2, S2, EMR), Kafka, Spark, Hadoop, Python, SQL, HBase, Bash, Selenium, Ansible, Linux, REST API, JSON, Avro

## 2015 – 2019  *Senior Software Engineer*

Same responsibility as above

## 2010 – 2015  *Software SQA Engineer*

- Developed and executed **test plans and automated test cases** for large-scale data validation in email security pipelines
- Built Bash-based regression packs to validate email data ingestion, rule execution, and log integrity across mail servers
- Queried centralized databases using **SQL** for validation and issue triage
- Configured and validated customer-specific security rules across distributed systems
- Managed large test datasets and performed **backend validation** of data processing and central DB replication issue
- Investigated failures from overnight automation runs and collaborated with cross-regional teams to resolve defects

Technologies: Bash Scripting, SQL, Linux

## 2009 – 2010 **Rogers Communications Inc** - *System Functional Test Lead*

- Worked on Rogers business transit project for CRM domain as a technical interface between Development and Business
- Implemented the test strategy and led the two outsourcing QA teams to conduct the testing activities and ensuring the QA outputs reached the highest quality
- Conducted System and Business Acceptance testing for **IVR** and CRM

## 2008 – 2008 **Openlane Inc** – *QA Performance Engineer*

- Setup the performance automaton framework in the Toronto office
- Analyzed the load distribution of production and made test plan, test case
- Created performance test scripts, executed benchmark and load testing utilizing Borland Silk Performer
- Worked closely with lead developers, DBA, QA director and IT to analyze the performance issue and bug verification

Technology: Borland Silk Performer, Oracle, Linux

## 2006 – 2008 **Oracle Asia R&D Center** – *Software Quality Analyst*

Played a lead role (6 QAs) participant in below core projects and performed various type

- Automated test scripts for web testing using HP QTP and WinRunner
- Performed SOAP API testing using SoupUI
- Performed functional testing for SDK product using JUnit

- Performed Stress testing for UI and API using JMeter and the bash scripts to monitor the Linux backend

Projects:

1. Oracle E-Business Suite R12 (Core ERP application of Oracle)
2. Oracle XBRL Enterprise Suite
   XBRL is one of a family of "XML" which is a standard of communicating financial information between businesses.

Technology: CRM, Web-based applications, HP QTP, SoupUI, Selenium, JUnit, JAVA, Linux, Oracle DB, Oracle Content DB

## 2002 – 2005 Yonyou Network Technology Co., Ltd

Yonyou is one of the leading providers of ERP solutions in China

*Quality Control Specialist*

- Worked closely with SI test manager, designed a new in-house defect management system
- Oversaw and audited the software development process and contributed to process improvement and reporting

*Software developer - JAVA*

- Implemented Pricing and Customer Service modules of a Web-based J2EE & multi-layer CRM application
- Extensively implemented complex SQL for business layer

## 1997 – 2001 East Netscape Network Technology Co. Ltd – *Web Developer*

- Implemented E-Commerce platform

Technology: Java, JavaScript,  ASP, VBScript, HTML, SQL Server, IIS

## CERTIFICATES

- Databricks Fundamentals Certificate
- Generative AI Fundamentals Certificate
- Sun JAVA programming (SCJP) Certificate
- Oracle Database 9i and 10g administrator Certificates
- HP Certified Quick Test Pro Product Specialist

- HP Certified LoadRunner 8.0 Product Specialist
- HP Certified Quality Center v9 Specialist

## AWARDS

- Excellent team Award 2024 in IMCO
- WOW Thanks award of Symantec multiple times
- Excellent Individual Award 2007 Q2 of Oracle Asia R&D Center (OARDC)
- Excellent team Award 2007 Q3 of OARDC

## EDUCATION

1997 Bachelor's degree in Computer Science

Capital Normal University, Beijing, China

## REFFRENCES

Available upon request