Zijiang Yan

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Bio

Senior Software Development Engineer with 5+ years of experience supporting and improving **mission-critical distributed systems**, automating CI/CD platforms, and developing internal tools used by large engineering teams. Strong background in **Python-based tooling, Linux systems, and cloud-native platforms**, with hands-on experience troubleshooting production issues, performing root-cause analysis, and improving system reliability. Proven ability to communicate complex technical findings through documentation and dashboards, and to collaborate cross-functionally with software, infrastructure, and validation teams to accelerate delivery and improve customer experience.

Education

York University, B.Sc. (Hons.), Double Major in Computer Science & Statistics   Sept 2016 – Aug 2021
- **Advisor**: Prof. Hina Tabassum
- **Capstone**: Optimizing V2I Communication for Self-Driving Vehicles (Python/C++) with a focus on distributed systems behavior, performance analysis, and reproducible telemetry pipelines

Skills

Languages & Scripting: Python (Fluent/Production), Bash, Groovy (Jenkins), JavaScript/Node.js, SQL, Java, C++, YAML, JSON; experienced in reading, debugging, and maintaining large codebases

CI/CD & DevOps: Jenkins, **GitLab CI/CD**, GitHub Actions, Docker, Kubernetes (EKS/AKS), Helm, Artifactory, Ansible, Terraform

Data & Reporting: Log Analysis, **Snowflake/MongoDB** (Integration), REST APIs, Web-based Dashboards (Grafana/Custom), **PowerBI** (Familiar)

Infrastructure & Reliability: Production Stability, Incident Response, Root Cause Analysis, Prometheus, ELK Stack, CloudWatch, SRE Principles

Tooling & Security: White-box Testing Support, Static Code Analysis, SBOM, Artifact Signing (Cosign), Secret Management (Vault, Bitwarden)

Program Management: Jira Workflows, Agile/Scrum, Cross-functional Collaboration, Release Trains (SAFe), Change and Incident Management

Infrastructure & Reliability: Production Stability, Incident Response, Root Cause Analysis, **DNS/TCP troubleshooting**, traffic flow analysis, Prometheus, ELK Stack, CloudWatch, SRE Principles

Experience

Senior DevOps / CI Platform Engineer, Bell Media – Toronto, Canada   Oct 2021 – July 2025
- **CI Platform Ownership & Automation:** Designed, owned, and supported large-scale **Jenkins-based CI/CD platforms** running on Docker and Kubernetes, reducing build latency by **27%** through parallel execution, caching, and workflow optimization.
- **Production Reliability & Incident Response:** Maintained **95%+ uptime** for critical engineering infrastructure; acted as an escalation point during outages, performing root-cause analysis and coordinating fixes across teams.
- **Tool Development & Debugging:** Built Python-based diagnostic and automation tools for **log analysis, failure triage, and code scanning**, improving signal-to-noise ratio and reducing mean time to resolution (MTTR).
- **Monitoring & Reporting:** Developed internal dashboards and reporting systems to surface build health, failure trends, and performance metrics to engineers and leadership.
- **Repository & Artifact Management:** Standardized artifact promotion, retention, and governance using **JFrog Artifactory**, ensuring secure, traceable, and reproducible software delivery.

- **Cross-Team Collaboration:** Worked closely with software architects, networking teams, and QA to troubleshoot complex system issues and improve test automation coverage across unit, integration, and compliance layers.
- **Network-Level Troubleshooting:** Diagnosed production issues involving **DNS resolution, TCP connection failures, and service-to-service latency** across containerized and cloud environments, using logs, metrics, and traffic behavior analysis to isolate root causes.
- **Traffic & Packet Analysis:** Performed **network traffic analysis** (request tracing, latency breakdowns, connection error patterns) to identify packet loss, timeout propagation, and load-balancer misconfigurations impacting distributed systems.

AI Systems & Software Engineer (Research), York University – Toronto, Canada   Mar 2021 – present
- **Distributed Data Pipelines:** Designed and debugged Python-based pipelines processing large-scale datasets, with emphasis on correctness, performance, and fault tolerance.
- **Internal Tools & APIs:** Developed web-based tools and REST APIs for experiment scheduling, metrics export, and performance reporting for technical stakeholders.
- **Infrastructure Automation:** Automated reproducible research environments using Terraform and Ansible across Linux-based bare-metal and containerized clusters.

Software Developer Intern, Bell Canada – Toronto, Canada   May 2021 – Aug 2021
- **Cloud-based Debugging & Automation:** Developed serverless Python applications on AWS (Lambda/Glue) to process data streams, automate validation checks, and improve operational visibility.

Publications

Semantic-Aware Adaptive Video Streaming Using Latent Diffusion Models for Wireless Networks   July 2025

Zijiang Yan, Jianhua Pei*, Hongda Wu, Hina Tabassum, Ping Wang

10.1109/MWC.001.2500068 (IEEE Wireless Communications)

Generalized Multi-Objective Reinforcement Learning with Envelope Updates in uRLLC-enabled Vehicular Networks   June 2025

Zijiang Yan, Hina Tabassum

10.1109/TVT.2025.3580502 (IEEE Transactions on Vehicular Technology)

Hierarchical and Collaborative LLM-Based Control for Multi-UAV Motion and Communication   July 2025

Zijiang Yan, Hao Zhou*, Jianhua Pei, Hina Tabassum

10.48550/arXiv.2506.06532 (ICML 2025 Workshop on Machine Learning for Wireless Communication and Networks (ML4Wireless))

Hybrid LLM-DDQN based Joint Optimization of V2I Communication and Autonomous Driving   Feb 2025

Zijiang Yan, Hao Zhou, Hina Tabassum, Xue Liu

10.1109/LWC.2025.3539638 (IEEE Wireless Communications Letters)

CVaR-Based Variational Quantum Optimization for User Association in Handoff-Aware Vehicular Networks   June 2025

Zijiang Yan, Hao Zhou, Jianhua Pei, Aryan Kaushik, Hina Tabassum, Ping Wang

10.1109/ICC52391.2025.11161596 (IEEE International Conference on Communications (ICC 2025))

Optimizing Vehicular Networks with Variational Quantum Circuits-based Reinforcement Learning   May 2024

Zijiang Yan, Ramsundar Tanikella, Hina Tabassum

10.1109/INFOCOMWKSHPS61880.2024.10620888 (IEEE INFOCOM 2024 Workshops)

Reinforcement Learning for Joint V2I Network Selection and Autonomous Driving Policies   Dec 2022

Zijiang Yan, Hina Tabassum

10.1109/GLOBECOM48099.2022.10001396 (IEEE GLOBECOM 2022)