

# Zijiang Yan

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## Summary

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**Cloud & AI Platform Engineer** with 5+ years of experience designing and operating scalable **DevOps** and cloud infrastructure across **AWS and GCP** in enterprise environments. Strong expertise in **Kubernetes, CI/CD automation**, and **Infrastructure-as-Code**, with a focus on cloud-native platform engineering for distributed systems. Hands-on experience building **AI/ML platforms**, data pipelines, and model deployment workflows.

## Skills

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**Cloud & Platform Engineering:** AWS, Azure, GCP (GKE), multi-cloud architecture, distributed systems

**Kubernetes & Containers:** Kubernetes (GKE/EKS/AKS), Docker, Helm, autoscaling, rolling deployments

**CI/CD & DevOps:** Jenkins, GitLab CI/CD, GitHub Actions, pipeline automation, JFrog

**Infrastructure as Code:** Terraform, Ansible, environment provisioning, automation

**Programming:** Python, Java, Docker, Bash, Groovy, JavaScript/TypeScript, SQL, C#, R

**Observability & Reliability:** Prometheus, Grafana, ELK, SLI/SLO, incident management

## Experience

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**DevOps Engineer II**, Scotiabank – Toronto, Canada Apr 2026 – present

- Designed and operated scalable cloud and on-prem infrastructure supporting enterprise data platforms with 100+ integrated systems
- Built and maintained **CI/CD** pipelines and Infrastructure-as-Code (**Terraform/Ansible**) to improve deployment efficiency and consistency
- Managed Kubernetes (**GKE**) cluster and containerized workloads (**Docker, Helm**) across dev, staging, and production environments
- Implemented observability (**Prometheus, Grafana, ELK**) with **SLI/SLO**-driven monitoring for proactive incident response
- Collaborated with data engineering teams to support large-scale data ingestion, processing, and platform reliability

**Senior DevOps and Cloud Engineer**, Bell Media – Toronto, Canada Oct 2021 – July 2025

- Architected and operated **Kubernetes-based CI/CD** platform supporting large-scale distributed systems
- Designed and provisioned cloud infrastructure using **Terraform**, improving deployment consistency and scalability
- Optimized CI/CD pipelines (**Jenkins/GitLab**), reducing build latency by 27% through caching and workflow redesign
- Built **Python**-based tooling for automation, diagnostics, and log analysis to reduce **MTTR**
- Implemented observability stack (**Prometheus, Grafana, ELK**) for system monitoring and alerting
- Led incident response and root cause analysis, maintaining >95% platform uptime
- Standardized artifact management and secure software delivery using **JFrog**

**AI Systems & Software Engineer (Part-time)**, York University – Toronto, Canada Mar 2021 – present

- Designed and deployed containerized **AI/ML pipelines** supporting distributed model training
- Built scalable data processing pipelines and APIs for large-scale datasets and experimentation
- Automated research infrastructure using **Terraform and Ansible** across hybrid environments
- Developed evaluation frameworks with automated logging, telemetry, and benchmarking

**Software Developer Intern**, Bell Canada – Toronto, Canada May 2021 – Aug 2021

- Developed serverless applications (**AWS Lambda, Glue**) for data processing and validation
- Automated cloud-based data pipelines improving operational efficiency and observability

## Education

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**York University**, MSc in Electrical and Computer Engineering – Toronto, Canada Jan 2026 – Dec 2027

- Focus: **AI**-driven wireless communication, **LLM**-assisted decision systems, and **Quantum** Machine Learning
- Advisor: [Prof. Hina Tabassum](#), [Prof. Ping Wang](#)

**York University**, BSc (Hons.) in Computer Science & Statistics – Toronto, Canada Sept 2016 – Aug 2021

- Focus on AI, cloud computing, and data-intensive applications
- Capstone: Optimizing V2I Communication for Autonomous Driving using RL-based frameworks

## Publications

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**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](https://doi.org/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](https://doi.org/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](https://arxiv.org/abs/2506.06532) (ML4Wireless Workshop @ ICML 2025)

**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](https://doi.org/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](https://doi.org/10.1109/ICC52391.2025.11161596) (IEEE ICC 2025)

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

*Zijiang Yan*, Ramsundar Tanikella, Hina Tabassum  
[10.1109/INFOCOMWKSHP561880.2024.10620888](https://doi.org/10.1109/INFOCOMWKSHP561880.2024.10620888) (IEEE INFOCOM 2024 Poster)

<b>Multi-UAV Speed Control with Collision Avoidance and Handover-Aware Cell Association - DRL with Action Branching</b> <i>Zijiang Yan</i> , Wael Jaafar, Bassant Selim, Hina Tabassum <a href="https://doi.org/10.1109/GLOBECOM54140.2023.10436730">10.1109/GLOBECOM54140.2023.10436730</a> (IEEE GLOBECOM 2023)	Dec 2023
<b>Reinforcement Learning for Joint V2I Network Selection and Autonomous Driving Policies</b> <i>Zijiang Yan</i> , Hina Tabassum <a href="https://doi.org/10.1109/GLOBECOM48099.2022.10001396">10.1109/GLOBECOM48099.2022.10001396</a> (IEEE GLOBECOM 2022)	Dec 2022
<b>Intelligent Multi-UAV Navigation in ITNTNs: A Hierarchical LLM Approach</b> <i>Zijiang Yan</i> , Hao Zhou, Wael Jaafar, Jianhua Pei, Ping Wang, Halim Yanikomeroglu, Hina Tabassum (Under Review)	May 2026
<b>Hierarchical LLM-Driven Control for HAPS-Assisted UAV Networks: Joint Optimization of Flight and Connectivity</b> <i>Zijiang Yan</i> , Hao Zhou, Wael Jaafar, Jianhua Pei, Ping Wang, Halim Yanikomeroglu, Hina Tabassum <a href="https://doi.org/10.48550/arXiv.2605.11509">10.48550/arXiv.2605.11509</a> (Under Review)	Apr 2026
<b>Concept Drift-Aware Load Forecasting for IoT Energy Systems Leveraging Times-Net-Based Two-Layer Framework</b> Yixiang Huang, <i>Zijiang Yan</i> , Jianhua Pei, Jinfu Chen (Under Review)	Mar 2026
<b>EMFusion: An Uncertainty-Aware Conditional Diffusion Framework for Frequency-Selective EMF Forecasting in Wireless Networks</b> <i>Zijiang Yan</i> <sup>*</sup> , Yixiang Huang <sup>*</sup> , Jianhua Pei, Hina Tabassum, Luca Chiaraviglio <a href="https://doi.org/10.48550/arXiv.2512.15067">10.48550/arXiv.2512.15067</a> (Under Review)	Dec 2025

## Professional Activities

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**Conference Session Chair:** IEEE ICC 2025, IEEE GLOBECOM 2023

**Technical Program Reviewer:** NeurIPS, IEEE ICC, IEEE GLOBECOM, IEEE WCNC, IEEE VTC, IEEE DySPAN

**Journal Reviewer:** IEEE TMC, IEEE TWC, IEEE TCOM, IEEE TNSE, IEEE COMML, IEEE TNSM, IEEE WCM, IEEE IOTM

## Honors and Awards

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- 3rd Place – Student Innovation Competition on Sustainable Space Communications, 2025
- Bell Geekfest Inspiring Lightning Talk, 2025
- Silver Award – China Youth Creative Competition (Technology Innovation Track), 2024
- Bell Geekfest Best Presentation, 2023
- Lasonde Undergraduate Research Award (LURA), York University, 2022
- Dean's List, Lasonde School of Engineering, 2018