

Gi Yeon Kim

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Executive Summary

Software Development Engineer with a strong foundation in Machine Learning, DevOps, and AI-driven solutions. Skilled in supporting large-scale, customer-facing systems and delivering high-quality technical solutions that enhance user experiences. Experienced in providing technical support, troubleshooting complex issues, and collaborating with cross-functional teams to drive product improvements. Passionate about applying advanced technologies like natural language processing and cloud infrastructure to create trusted, user-centered experiences. Committed to advocating for users by identifying innovative solutions that elevate their interaction with products across ecosystems.

Core Skills

Technical Skills

Language: Python · Shell (Bash) · Groovy · Java
Tool: PyTorch · Generative AI · IBMCloud · AWS · Jenkins

Interpersonal Skills

Adaptability, Problem-Solving, User-focused, Collaboration, Innovation, Communication

Professional Experience

IBM, Toronto

Software Engineer, Cloud DevOp | AI/ML · Cloud · Kubernetes · Collaboration

06/2024-present

- Developed a **proof of concept** for integrating a Machine Learning **Graphical Variational Autoencoder (GVAE)** to automate the **generation of faulty synthetic queries for Db2 testing**. These extra test cases will **improve the accuracy and reliability** of system patch releases.
- Design and maintain **CI/CD pipelines** for Db2 on **Cloud**, reducing deployment failures and manual interventions through automation and optimization.

RBC, Toronto

Data Scientist | Predictive Analytics · User-oriented · Big Data Processing (ETL) · Data Visualization 05/2023-09/2023

- Led the end-to-end **ML** development of a **customer churn prediction** project, from data retrieval and ETL to model selection and training, delivering insights that **shaped customer retention strategies**.
- **Streamlined large-scale data processing** with **ETL** pipelines, ensuring efficient data flow for predictive analytics and reporting.

IBM, Toronto

Software Engineer, Causal Analysis | DL/ML · Generative AI · DB2 · Debugging and Testing

05/2022-05/2023

- Developed a **GAN-based system to generate syntax-aware SQL queries**, expanding test coverage for Db2 deployments and improving system stability by increasing the variety of test cases.
- Prototyped a Random Forest **anomaly detection model** for time series analysis to predict potential system faults, **reducing manual testing efforts**.

- Conducted comprehensive **high availability testing** across network and application layers, ensuring sustained uptime for Geographically Dispersed Db2 PureScale Cluster (GDPC) **databases**.

aUtoronto, Toronto

2D object detection Engineer | Computer Vision · Real-time Applications · Optimization · AI **08/2021-06/2024**

- **Trained, validated, and fine-tuned** object detection models (**YOLOR**) for **real-time application**, achieving 79% accuracy while balancing speed and precision for optimal performance in production environments.
- **Led algorithm development**, designing a systematic process to optimize for low-latency performance and selecting the best-performing models for real-time use cases.

Tauria, Waterloo

DevOps Engineer | Docker · DevSecOps · API integration **05/2021-09/2021**

- **Optimized Docker Pipeline** via enhancing Dockerfile deployment within CI/CD pipelines, allowing increase in deployment efficiency.
- **Enhanced Security** by integrating OWASP ZAP within Docker to fortify the safety of development processes.

Seoul National University, Seoul

Research | User-focused System Design · Automation · Docker (Virtualization) **05/2020-09/2020**

- **Developed a real-time tracking system** for autonomous vehicles using Docker and web VNC interfaces, improving **usability for end-users**.
- **Automated** deployment processes using **Bash scripts**, significantly streamlining operational workflows.

Project

Trustworthy ML · Transfer Learning · Neural Network · Distributed System

- **Bias Mitigation in ML:** Developed *adversarial networks* to mitigate racial bias in recidivism predictions, enhancing the trustworthiness of machine learning models.
- **Sign Language Recognition:** Applied *transfer learning* on ResNet for accurate classification of American Sign Language gestures, contributing to accessibility solutions.
- **Low-Resource Health Diagnostics:** Trained a lightweight *CNN* for malaria detection in blood samples, optimized for deployment on low-computation devices in underdeveloped regions.
- **Distributed System:** Implemented *Client-Server-Storage* distributed system from ground up that got Account Management, Session Management, and Data Security embedded.

Thesis

Optimization of Urban Search Trajectories for UGVs through **Deep Reinforcement Learning (DRL)** and **Graph-Based Techniques (GNN)**

Hobbies

Biking 🚲 · Squash · Swim 🏊 · Violin · Piano 🎹 · Guitar

Education

Engineering Science: **Machine Learning** Major + **Robotics** Minor
University of Toronto, Toronto Canada