Yipeng (Perry) Zhu

(604)-360-2666 perryzhu2004@outlook.com
https://www.linkedin.com/in/perry-z
https://github.com/Perry2004 | https://perryz.net

Technical Skills

- **Languages** – TypeScript, Java, Python, C/C++, R, MATLAB, SQL, bash, HTML/CSS, JavaScript, GLSL
- **Frameworks** – Spring Boot, Nest.js, React.js, Tanstack Start, Streamlit, pandas, Three.js, WebGL
- **DevOps** – Terraform, Kubernetes, Ansible, AWS, Grafana Stack, OTel, Github Actions, Docker

Work Experience

Samsung R&D Canada
Cloud Ops Database Engineer Sep 2025-Present

- Developed a centralized User Account Management (UAM) tool to unify prod and non-prod account management for 2000+ accounts across all project databases with an intuitive UI. Implemented enterprise-grade security features, including automated password rotation, account expiration, safe credential communication via corporate email, and ticket-attached audit logging for strict compliance.
- Orchestrated the UAM application deployment on Kubernetes with Argo CD and AWS EKS. Architected the underlying infrastructure by configuring network routings, VPC peerings, IAM policies, and Security Groups using Terraform IaC, allowing the tool to securely connect to all 100+ databases (MySQL, Postgres, Redshift, and MongoDB) across 20+ VPCs in 5 different AWS accounts and 3 different regions.
- Supported the observability migration from Datadog to self-hosted Grafana by utilizing Ansible to automate the configuration and deployment of Alloy agents across 70+ MongoDB EC2 instances, ensuring standardized metrics, traces, and log shipping to the observability backend.
- Performed index usage statistics collection by developing a cron script and a dashboard to automatically collect, aggregate, and visualize MongoDB index usage across all replica sets, enabling senior DBAs to effectively analyze and optimize database index performance.
- Currently designing and building custom Grafana dashboards to monitor RDS, Redshift, and MongoDB status, aiming to improve real-time visibility into database and OS status and timely alerting.

UBC Pacific Laboratory for Artificial Intelligence (PLAI)
Software Engineer - Infrastructure & Custom Development May 2025-Aug 2025

- Upgraded and enhanced legacy Java plugins and mods from Minecraft 1.19 to 1.21, improved the connection and termination logic based on specific Minecraft client states to ensure stable and reliable behavioral data collection.
- Architected the "Agent Companion Framework" to integrate AI characters into the game server, featuring a custom session queue and a specialized command interface designed to facilitate private, uninterrupted communication and interaction with agents. Implemented deterministic safety guardrails to strictly filter actions and prevent improper behaviors (e.g., violence, property destruction), ensuring a controlled research environment.
- Contributed to the PLAITime mechanism backend development to optimize computational resources and improve data quality. Integrated a transcription model to batch-process player voice transcripts with surrounding audio context and implemented real-time validation logic using Lambda functions and UDP sockets. Additionally, designed an incentive mechanism that dynamically awards playing time for high-value interactions via in-game notifications while limiting sessions for low-quality inputs.

The University of British Columbia, Department of Computer Science
Teaching Assistant - CPSC304 Introduction to Relational Databases Jan 2025-Apr 2025

- Conducted weekly lab sessions guiding over 50 students through relational database design, ER models, relational algebra, and SQL implementation.
- Mentored 5 groups on full-stack database management projects through weekly meetings and provided comprehensive feedback via grading and responsive Piazza/email support.

Education

University of British Columbia Sep 2023-Present
4th year Bachelor of Science, Combined Major in Computer Science and Statistics