Raymond Pang (Pang Siu Fai)

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SKILLS

Languages: Java (best), JavaScript, C++, Python **Tools**: Docker, Ansible, Mockito, JMH, JUnit, Bash, Git, Terraform, etc.
Libraries: Spring Boot, ReactJS, QuickFIX, etc. **Skills**: Concurrency, Design Pattern, System Design, TDD, etc.
Systems: RabbitMQ, Kafka, Redis, WebSocket, gRPC, FIX, SQL (PostgreSQL, MySQL), S3, MongoDB, AWS, etc.

PROFESSIONAL EXPERIENCE

Senior Software Engineer June 2022 – Present
PreTech Group Holdings Ltd.

- Architected the entire system, including the video analytics devices written in C++, backend services written in Java Spring Boot and real-time geo-spatial dashboard written in React
- Leveraged Redis to cache alert configuration, resulting in a 3x increase in throughput for detection alerts
- Leveraged Kafka brokers to manage a 5x increase in traffic spikes during peak hours by balancing the Java consumer workload for geo-temporal throughput.
- Leveraged Java multithreading with virtual threads to parallelise IO operations, empowering the system to handle a 3000-fold increase of geo-temporal data throughput.
- Developed a multi-threaded object tracking system with a producer-consumer and poison pill design pattern, which integrates Kalman Filter, IPM, Hungarian matching and RIPOC, markedly increasing the processing frame rate fivefold.
- Handled the rendering of 1M pixels real-time heatmap from 300 million records with hash map and in-browser multithreading with ReactJS and HTML5 Canvas. So, that the browser does not crash, and the avg. latency is also decreased by 8 times.
- Reduce perceived latency of editing canvas object from 1s to 20ms by queuing API requests in redux asynchronously
- By using summary tables, composite index and table partitions, PostgreSQL latency is decreased by 10 times for complex analytics of 1 billion rows of geo-temporal data
- Achieved zero downtime within two years by leveraging Ansible, Docker and Auto Scaling groups on AWS cloud for critical low-latency services such as population analysis, real-time trespasser alert and car accident prevention, etc.

Research Assistant (Software Engineering Role) Jan 2022 – June 2022
Hong Kong University of Science and Technology

- Invented an algorithm based on RRL to help Cathay Pacific predict and understand the cause of airline delay.
- Developed pre-processing, post-processing, and model interpretation packages for models such as RRL and EBM with PyTorch, effectively eliminating implementation bias caused by repetitive code in comparative analysis.

Software Developer Aug 2021 – Jan 2022
Simply Solution HK Limited

- Proposed and developed a data pipeline using OCR, Python, Google Sheet API and MySQL, helping data teams reduce data entry effort from 600 man hours to 8 man hours each year.
- Developed full-stack cross platform mobile app and web app (iProtect / www.iprotect.hk) with React, React Native and Node.js, achieving above 4/5 ratings in App Stores and Play Store as of Jan 2021.

Software Developer Feb 2020 – Aug 2021
Freelancer

- Led the full-cycle creation and launch of 4 web platforms, topping with a search engine with ReactJS, Node.js, Elasticsearch and Geocoding API that supports map pinpoint, address, full-text, and key-value queries, which can also refresh results upon new user keystrokes within 500 ms time interval, significantly improving user experience.

Software Developer Sept 2018 – Feb 2020
Expert Systems IVR Asia

- Developed a video conference system with Laravel, MySQL and Vue.js, used by critical services including 18 public hospitals and financial institutions in Asia.

HONOR & AWARD

Qianhai HK Startup Competition - Finalist Sept 2022 – Nov 2022

- Developed a concurrent system that parallelizes real-time pose estimation, streaming, and video editing within 4 cores.
- Invented real-time time-series pattern recognition with O(n*k) time complexity for action-recognition.

HK Tech 2022 Cohort - HK$100k Funding (FinTech Sector) Sept 2018 – Feb 2020
(https://www.cityu.edu.hk/hktech300/start-ups/seed-fund-teams/ai-driven-insurtech-platform)

Cyberport University Partnership Program - Finalist (FinTech) Aug 2018

EDUCATION

Bachelor's Degree in Computer Engineering Sept 2013 - June 2018
City University of Hong Kong

GITHUB

- Multithreaded Stock Exchange Simulator with Java, Atomic, Future, QuickFIX/J, JMH, Junit, Mockito, ActiveMQ, SQL
- Thread-safe blocking queue combining Locks and CAS to balance performance in different scenarios