KRIS LAI

Senior Software Engineer

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SKILLS

Python | Java | C
C++ | C# | Golang
Haskell | Scheme

AWS | Jenkins
CloudbeesCD | Docker
Git | SVN | ClearCase

WEB DEV

JavaScript | React
Angular | Node.js
Django | Spring Boot
PHP | HTML5
REST API | GraphQL

DATABASE

DynamoDB | Db2
Postgres | InfluxDb
MongoDb | MySQL

LANGUAGES

English: Native

Cantonese: Native

Mandarin: Working Proficiency

EXPERIENCE

Senior Software Engineer | Morningstar, Inc 📅 Jan 2022 – Present

- Developed an API service for calculating portfolio risk scores using .NET framework. Deployed on AWS with Serverless Architecture (API Gateway, Lambda, DynamoDB, ECS Fargate)
- Perform data analysis on security portfolios stored in S3 with Athena, converting csv to parquet format with Glue for cost-savings and enhanced performance
- Designed disaster recovery architecture and set up multi-region failover strategy on AWS (Route53, ALB, Lambda, DynamoDB global tables, S3 replication, Backup w/ PITR)
- Developed an automated workflow for validating new and existing API results using AWS Lambda, SQS, and CloudWatch to test over 1.7 million portfolios
- Integrated application monitoring automation with EventBridge and SNS
- Designed and implemented CI/CD pipeline using Jenkins and CloudBees CD
- Deployed multi-environment software infrastructure on AWS using terraform
- Integrated SonarQube and Checkmarx for application quality and security inspection (SOC2 Compliance)

Full Stack Software Engineer | Peak Power Inc 📅 Jul 2020 – Jan 2022

- Full stack development on a web service which customer uses to gain analytical insights on their building such as energy usage, occupancy, and climate settings. Frontend developed using Angular with Spring Boot. Utilized Python, Java, and PHP as backend services to collect and interact with information from Energy Storage and Building Sensors. Server hosted on AWS and rerouting traffic using Elastic Load Balancer.
- Designed and implemented a multi-threaded Java driver with OOP to establish parallel connections and setup communications between software and IOT devices across North America. The driver decreased latency by 500% between sending and receiving data compared to previous workflow and reduced maintenance/deployment cost exponentially.
- Setup Kafka in Python to stream and process raw sensors data, filtering out noise and storing clean data. Designed an automated alerts service with post-processed sensors data.
- Containerizing backend API with Docker, and adding error tracking system Sentry and Datadog.

Software Development Team Lead | IBM 📅 Feb 2019 – Jul 2020

- Pioneered Project ARBIT to create a standalone service that automates the process of investigating failures within Db2. The API is built on top of Python and Golang, containerized as a RESTFUL service using Docker.
- ARBIT reduced the company's employee cost by around $1 million per year
- Led Db2's functional verification team of 11 developers and QAs, to ensure Db2 transitions from development to production stage with efficiency and minimal errors in every components.

CERTIFICATIONS

- AWS Certified Solutions Architect - Associate | AWS 📅 Nov 2022 - Nov 2025
- Enterprise Design Thinking - Team Essentials for AI | IBM 📅 Jun 2019
- Enterprise Design Thinking Co-Creator | IBM 📅 Jun 2019

EDUCATION

Bachelor of Science (B.Sc.) | University of Toronto 📅 2013 – 2018

- Computer Science - Specialist in Software Engineering