Frank Zhang-Zheng

Remote | (989) 615-4879 | contact@frankzhangzheng.com

Core Competencies

Programming and DevOps
- Python
- TypeScript (Node.js)
- Docker
- GitHub Actions
- npm
- SonarQube
- Terraform
- AWS CDK
- Kubernetes
- AWS ECR
- AWS ECS
- AWS Lambda
- FastAPI

Data Technologies
- SQL
- Apache Kafka
- Microsoft SQL Server
- Oracle
- PostgreSQL
- Snowflake
- MongoDB
- AWS DynamoDB
- Redi
- AWS Kinesis
- AWS SQS/SNS
- Elasticsearch
- DataDog

Data Architecture
- Event Driven
- Batch Processing
- Medallion
- Data Warehouse
- Data Lake
- Data Mart
- Data Lakehouse
- Operation Data Store
- ETL/ELT Pipelines
- Workflow Automation

Work Experience

Sr. Data Engineer | Sr. Platform Engineer   Nov. 2021 – present
Associated Bank   *Milwaukee, MI*

- Data Contract Framework
  - Engineered a robust CI/CD pipeline using GitHub Actions to automate data contract deployment and integration with existing workflows via the Control-M API, significantly streamlining operations
  - Developed a Python/FastAPI-based REST API, hosted on AWS with DynamoDB database, providing critical data contract access and interactive Swagger documentation for stakeholders
  - Authored comprehensive technical documentation and training materials, enabling seamless adoption and empowering users across departments
- Event-Driven Streaming Framework
  - Pioneered and implemented a new event-driven streaming framework to ingest high-volume Kafka data into Snowflake, establishing the organization's first near real-time data processing capability
  - Engineered a scalable data ingestion pipeline leveraging AWS Lambda, Apache Kafka, AWS S3, and Snowflake Snowpipe to process hundreds of messages per minute with a 15-minute processing interval, enabling rapid business insights

- ○ Successfully adapted project scope under tight deadlines to transition from batch file processing to a streaming solution for a new loan platform, ensuring business data availability
- Manual Workflow Automation
  - ○ Led the automation of the organization's force closed accounts workflow, transforming complex, manual, word-of-mouth process into a structured, automated solution that enhanced operational efficiency and reduced time spent closing accounts by 75%
  - ○ Designed and implemented an end-to-end data pipeline to extract, transform (via SQL), and load banking system data into Salesforce CRM through the Salesforce Bulk API
  - ○ Developed Python processes utilizing the Bulk API to both create new cases and extract processed data of closed cases for automated distribution to third-party vendors

Data Engineer   Nov. 2020 – Nov. 2021
Xpress Technologies   *Scottsdale, AZ*

- Engineered and deployed an automated data ingestion system, accommodating various file types (CSV, Parquet, TSV, Excel, plaintext) by dynamically identifying formats via file extensions and magic bytes
- Orchestrated data processing and quality checks using AWS Lambda Step Functions, integrating with a dynamoDB table that stored data quality rules (e.g. null value thresholds, data type consistency)
- Developed and maintained a Node.js/TypeScript service on a CRON schedule to synchronize carrier data from MongoDB to HubSpot CRM, ensuring timely customer status updates for marketing operations
- Engineered an event-driven data pipeline to periodically ingest weather data from an external API (FreightWaves SONAR) into a Kafka topic, enabling real-time consumption by a downstream Postgres database, and access to data needed for machine learning operations
- Used TypeScript, Node.js, and Docker to develop and deploy microservices to AWS to facilitate data transfer across the organization, with a focus on delivering clean and enriched data to the machine learning team to increase accuracy and usage of the core pricing product

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Education
Michigan State University   2014 – 2019
Bachelor of Science in Physics   *East Lansing, MI*