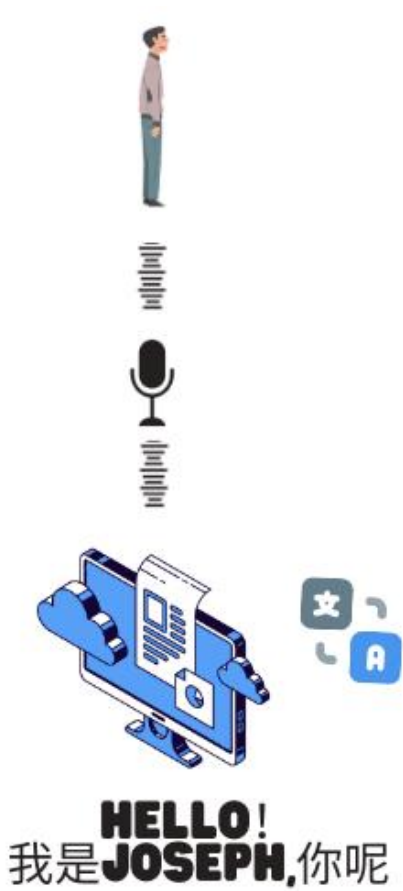# Deploying Automatic Speech Recognition System
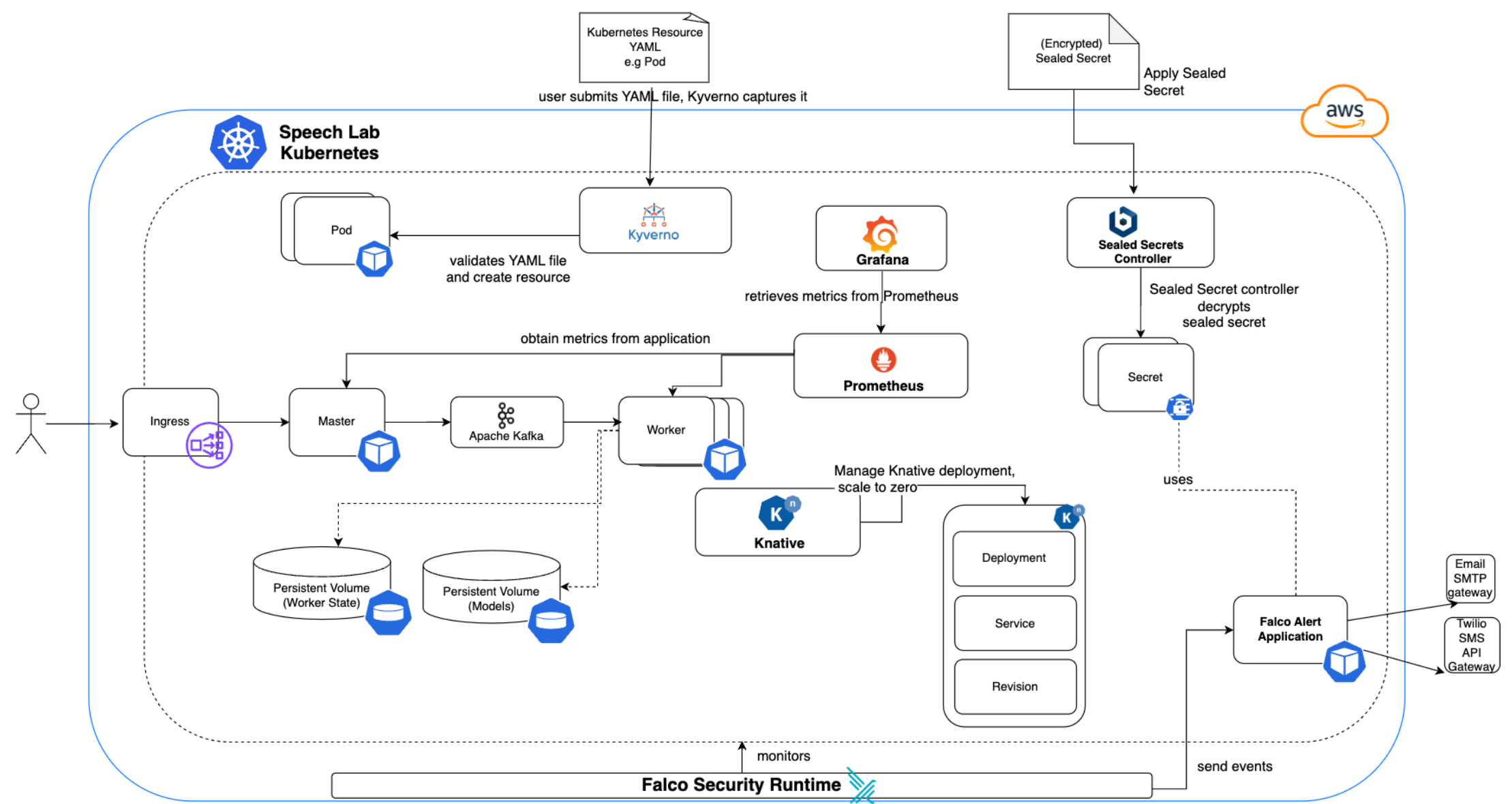
for Scalability, Reliability, and Security with Kubernetes

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Automatic Speech Recognition System

ASR deployment architecture

Project Objectives:

The Speech Lab@SCSE, NTU, has developed a state-of-the-art Automatic Speech Recognition (ASR) system suitable for environments where multilingualism and language mixing are common. Our primary objective is to deploy this ASR system onto the cloud, ensuring it offers both scalability and reliability in handling user transcription requests. Concurrently, we place a strong emphasis on implementing robust security measures to safeguard both the system's and users' data integrity and confidentiality.

Project Solutions:

- **Provisioned AWS cloud infrastructure using Terraform**
- **Implemented Falco cloud-native security tool for cluster security**
- **Decoupled microservices using Apache Kafka for reliability**
- **Enforced security and configuration best practices in the cluster using Kyverno**

Technology Stack

Infrastructure

Metrics & Monitoring

Security

Message Broker