Amazon Robotics

2019-2020 SCOPE Project

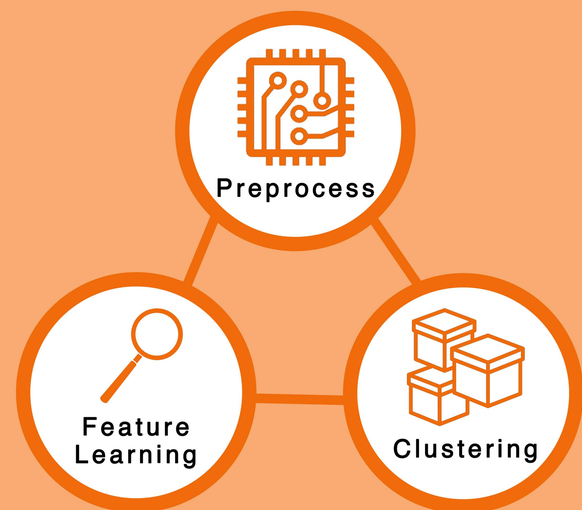
Problem

Amazon Robotics is interested in human-robot collaboratons at fulfillment centers. The development of an efficient and scalable product identification technology is critical to handling high throughput of package delivery.

System Requirements

- Economic and easy to deploy
- High processing speed
- Intuitive for workers

System Design



A **modular system** was proposed with three major components: Preprocessing, Feature Learning and Clustering. Many **machine learning** and **computer vision** techniques were implemented and tested for each module.

Results

- Developed modular software pipeline for rapid prototyping
- Conducted comparative performance analysis of 10+ machine learning models
- Created proof of concept with opportunity for future improvements

Team Members

Yichen Jiang

Kawin Nikomborirak

Noah Rivkin

Benjamin Ziemann

Liaisons

Vishal Kumar

Frank Preiswerk

Advisor and SMEs

Alessandra Ferzoco

Alice Paul

Steve Matsumoto

Olin College of Engineering

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