Research Collaboration Between FedEx & University of Memphis

RECENT & ON-GOING PROJECTS (2021-2022)

Unloading Trailers Using AI

Ali Adeli, Department of Business Information & Technology

Develop an algorithm/system to optimize the trailer unload/load operations at FedEx Ground hubs.
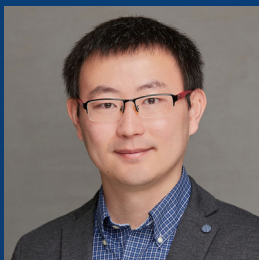
FedEx Op-Co: FedEx Ground (IT Ops)

Machine Learning Model for RDP Anomaly Detection

Kan Yang, Department of Computer Science

Develop an effective ML model that can detect malicious Remote Desktop Protocol (RDP) sessions based on the public datasets.
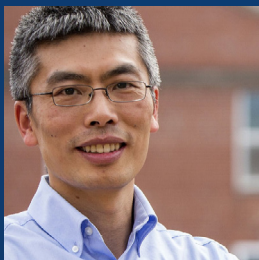
FedEx Op-Co: FedEx Services (IT Ops)

Real-time Log Analysis for Network Security Monitoring

Xiaofei Zhang, Department of Computer Science

A graph database that implements heterogenous event log modeling for real-time log monitoring based on public datasets.

FedEx Op-Co: FedEx Ground (IT Ops)

Demand Forecasting Model for International Cargo Flights

Huigang Liang, Department of Business Information Technology

Demonstrate the feasibility and value of a data analytics solution to demand forecasting at FedEx by focusing on forecasting air cargo demand for FedEx on two international lanes for a 12-month period.

FedEx Op-Co: FedEx Services

Quick Response Program

Sabya Mishra, Department of Civil Engineering

Informed Safety, Mobility, and Driver Comfort Enhancement Practices for Work Zones: Learnings from High-Fidelity Data.

FedEx Op-Co: FedEx Corporate

LiFE (Learning Inspired by FedEx) Research Project

Caitlin Porter, Department of Management

To understand the success of the Program, the University will conduct research through interviews of LiFE participants and FedEx representatives, data analytics and other approved research methodologies to understand the success of the Program.

FedEx Op-Co: FedEx Express

Pricing Strategy & Automation

Srikar Velichety, Department of Business Information Technology

This project leverages data about a pricing for package shipments for a variety of retailers.

FedEx Op-Co: FedEx International (Europe)

Optimizing Trailer Loading

Eddie Jacobs, Department of Electrical & Computer Engineering
Weizi Li, Department of Computer Science

The goal of this project would be to leverage operational shipment data, machine vision technology, and AI / Optimization capabilities to maximize loading efficiencies to reduce the number of tractor trailer (schedules) required to move freight.

FedEx Op-Co: FedEx Freight (Business Ops)
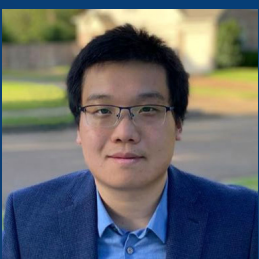
ML & RFID Tags

Kevin Berisso, Department of Engineering Technology

Use machine learning to identify accurate location of an RFID tag that is static; Use machine learning to identify when the RFID tag goes from being static to in-motion.

FedEx Op-Co: FedEx Freight (IT Ops)

Temperature Sensing Technology

Firouzeh Sabri, Department of Physics and Materials Science

Highlights technology for a reusable sensor that features a polymer temperature-sensing device resembling a band-aid and the temperatures can be read remotely, either in Celsius or Fahrenheit, through a wand.

FedEx Op-Co: FedEx Services (IT Ops)