

# SENIOR DESIGN FINALIST



Left to right: Courtney Lynch, Mark Gurevich, Andres Pavia, Baris Yildirim, Zheng Zheng, Matthew Schrichte, Jessica Reichsfeld, Dr. Alan Erera;  
Not pictured: Leonardo Lacayo

**Student Team:** Mark Gurevich, Leonardo Lacayo, Courtney Lynch, Andres Pavia, Jessica Reichsfeld, Matthew Schrichte, Baris Yildirim, Zheng Zheng

**Faculty Advisor:** Dr. Alan Erera

**Project Title:** Determining System Trailer Fleet Size and Terminal Assignment

**Project Summary:** Saia, Inc. is a super-regional, less-than-truckload (LTL) company. The team developed an approach to optimize the composition of Saia's trailer fleet, and to assign the fleet to appropriate terminals throughout the network. The approach relies on a large-scale integer program that models the flow of trailers of different types over time using a week-long planning horizon across Saia's network of nearly 150 terminals. Using the model for a number of planning weeks, the approach is used to determine the right size and composition of the trailer fleet and provides a purchasing strategy given a capital budget for new trailers. It is estimated that Saia will save \$1.8 million annually using the fleet proposed by the approach.