Wichita State University
Department of Industrial, Systems, and Manufacturing Engineering
ISME Colloquium Presentation

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Title: Predicting airline delays using control variables with machine learning algorithms

Date: Friday – March 22, 2019

Time: 11:00 am – 12:00 noon

Location: Engineering Building (EB) 211

Abstract

Every year around 20% of all flights are delayed or canceled. This costs the airline companies and passengers are in billions of dollars each year. According to a report in 2010 by UC Berkeley, Federal Aviation Agency (FAA) and National Center of Excellence for Aviation Operations Research (NEXTOR), around half of the total cost (direct and indirect) is paid by the passenger. The goal of this study is to predict airline delays using different control variables. We use binary supervised and unsupervised machine learning classification algorithms, while using different class weights, to predict delays using the US Domestic Flights data from 2015-2017. We also added and developed a few control variables to help improve the predictions. Different performance measures such as prediction accuracy, recall rates, receiver operation characteristics – area under the curve scores were used to evaluate the different algorithms.

Speaker Biography

Alok Dand is a PhD student in Industrial Systems and Manufacturing Engineering at Wichita state University (WSU). He has a Master's degree in Engineering Management from WSU and a Bachelor's degree in Aerospace Engineering from SRM University, India. Prior to moving to Wichita for graduate studies, he worked as an SAP System Administrator for Accenture, India. His current research interest includes supply chain, risk management, and data analytics. He is currently working at the Industry Assessment Center and the Graduate Studies in Business.