

CARTER MANN

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Education

University at Buffalo May 2017
Amherst, NY
Bachelors in Industrial and Systems Engineering
GPA: 3.5 overall, ISE GPA: 3.8

University at Buffalo May 2019
Amherst, NY
Masters in Industrial and Systems Engineering, concentration in Operations Research

University at Buffalo Present
Amherst, NY
Ph.D. student in Industrial and Systems Engineering, concentration in Operations Research

Experience

Teaching Assistant at the University at Buffalo Fall 2018 – Present

- Aid professor in teaching, grading, and handling of students
- Operate independent recitation periods where I provide my own instruction on course material
- Taught course subjects such as Probability and Statistics, Data Analytics, and Lean Manufacturing

Amherst Police Department Internship Spring 2017

- Used linear programming to develop a model to design a new schedule for the department
- Complex problem addressing multiple constraints to ensure the department maintained 24/7 coverage, minimizing the workload of each officer
- Coding in Java and use of optimizer Gurobi

Undergraduate Research of Automated Vehicles Spring 2016

- Studies into the feasibility of a common household to replace current vehicles with one or more automated vehicles
- Developed a mathematical model to simulate an average daily routine of a household
- Coding in Java and conducted data analytics of model output using R

Canada's National IISE Conference Winter 2016

- Attended and participated in competitions and leadership workshops

Winner of Best Manufacturing System Design for Class of 2017 Fall 2016

- Worked with team to design a manufacturing process for a model vehicle
- Used lean and six sigma principles to reduce process time, implemented built in quality control, and designed an easy to follow standard operating procedure

Re-tree Efficiency Team Fall 2015

- Using lean and six sigma principles, worked to streamline all aspects of the Re-Tree program such as tool distribution, planting, volunteer sign in, training, and implementing quality control

LMM Properties –Lifeguard Manager Summer 2012-2018

- Six years lifeguarding and managing pools throughout Erie County
- Recruited and trained lifeguards for new season
- Organized and created work schedules

Relevant Projects

Ad Hoc Drone Network Scheduling & Routing Utilizing Blockchain Security Fall 2019

- In the event where traditional network infrastructure is lacking, an ad hoc drone mesh network is deployed to provide network capabilities to ground users
- Based on variable demand over a given area along with battery life constraints and environmental factors, a scheduling and routing algorithm determines optimal location for fleet
- Data sharing performed using short range radio, sharing data packets by finding Shortest path from a source to destination node over an ever changing and disjoint network of drones
- Utilize blockchain smart contract technology to authenticate and validate drones which are entering the network, protecting against advisory drones attempting to infiltrate network

The "Second Opinion" for Medical Diagnoses Smart Contract Project Fall 2019

- Created an end-to-end decentralized application for the purpose of medical professionals receiving second opinions on patient diagnoses
- Blockchain smart contract application coded using solidity
- Created web interface for user interaction with the blockchain application

Predicting Potential Injury to MLB Pitchers Spring 2019

- Utilizing a vast dataset of pitch-by-pitch data to predict elbow injury for major league pitchers
- Used a variety of predictors such as pitch speed, pitch usage, pitch count, deviation in throwing motion, and many more.
- Using R software environment and a variety of analytical models, performed supervised learning techniques to predict possible future injures for players based on similarities between current pitchers throwing data, and that of previous pitchers who succumbed to Tommy John Surgery on the UCL of the pitching arm.

Relevant Skills

Microsoft Office-Excel, Word and PowerPoint
Coding experience using Java, Python and C++
Analytical skills using Maple, R, Minitab, and Excel
Optimization solvers such as Gurobi and CPLEX

Honors

Term Honor, Dean's List Spring 2015 - Present
Provost Scholarship for exceptional academics Fall 2013 – Present
Auto-acceptance into MS program due to excellent academic standing
Winner of SEAS Senior Scholars Research Scholarship
Awarded the Dr. John Zahorjan Scholarship due to excellent academic standing