Master's Presentations

Data Science and Analytics

Fall 2019

Thursday, December 5, 2019

1:00-1:50p

B-2-110 Mackinac Hall
School of Computing and Information Systems
Master’s Presentations
Data Science and Analytics
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Schedule of CIS Presentations:

1:00 pm - Three to Five Minute Lightning Rounds

Rachel Borashko – DSA Internship, Dorothy A. Johnson Center for Philanthropy
“Data at the Dorothy A. Johnson Center for Philanthropy at Grand Valley State University”

Sydney Brougham – DSA Internship, Priority Health
“PSM Internship at Priority Health”

Lex Drennan – DSA Internship, KPMG
“KPMG DSA Internship”

Antonio Ruiz – DSA Internship, OST
“OST Data Analytics Summer Presentation”

Sydney Steinauer – DSA Internship, Steelcase Inc.
“Steelcase Advanced Analytics Internship: Price Elasticity Analytics”

Chit Zin Win – DSA Internship, Michigan 2-1-1: United Way
“Scalable Data Integration with High-Throughput Serverless Computing”

Poster presentations to immediately follow for the remaining time.
Abstract:

As the data analyst at the Johnson Center, I am involved in a variety of projects in a variety of ways. Throughout the course of this internship, I did data processing, data analysis and reporting, presenting to the community, and map-making. In my presentation, I will touch on many projects that I worked on and give a general idea of the type of work I do. My poster acknowledges much of this work, but focuses more specifically on the Latinx Data Report, a project I led and was involved in from start to finish. The Latinx Data Report is an analysis of VoiceKent 2017 and VoiceGR 2016 data that aims to understand the experiences and perceptions of Latinx residents in Grand Rapids and Kent County.
Abstract:
I completed my Data Science and Analytics internship in the summer of 2019 with Priority Health Advanced Analytics. Priority Health sells health insurance plans across the state of Michigan and is an entity of the Spectrum Health integrated healthcare system. With no prior experience in a professional workplace, my objectives for this internship were to understand the environment and project workflow and contribute in the way an analyst would. The work exceeded my expectations in the best way possible, for I was able to see a major project through to completion over the course of six months. This project was the evaluation of the medical program Medication Therapy Management. I was able to participate in a number of additional projects, from which I got a sense of the variety of analyses the department performs. Through this experience, I learned so much about the industry, built a SQL and Tableau skillset, and grew more confident in my abilities. I am grateful for the support of my mentor and team, without whom this internship would not have been the same.
Abstract:

Over summer 2019, I interned for KPMG – one of the global top 4 management consulting firms. The internship focused on four key areas of training, observation, hands-on work, and professional development. The objectives of the internship were to develop technical coding and software development skills and to develop professional skills. KPMG invests extensively in internship professional and technical development, providing a wide range of training and development activities. A notable aspect of the internship was attending the National Intern Training in Orlando, Florida which provided the opportunity to network with peers, and to develop an appreciation of the company’s history, values and mission. The internship focused heavily on acculturation, providing the me with the opportunity to evaluate if KPMG is a good fit for me and vice versa.
Steelcase Advanced Analytics Internship: Price Elasticity Analytics
DSA Master’s Presentation
Presented By: Sydney Steinauer

Abstract:

Steelcase is the world’s leading commercial office furniture manufacturer, where we turn insights into innovations and push limits to transform and reimagine the workplace. Given recent tensions over tariffs, top Steelcase executives are seeking to better understand the effect of price increases in our overall sales. There are a lot of industry and business factors to consider and the structure and interdependencies of products make it difficult to derive a straightforward price-elasticity measure. Elasticity is a term used in economics to describe a change in the behavior of buyers and sellers in response to a change in another variable (in this case, price). I have developed a method to simulate bid/outcome scenarios and understand how they may change given the presence of a surcharge. Advanced statistical, machine learning, deep learning, and programming techniques were required to develop this type of analysis. The project included handling of semi-structured data, modeling to predict the likelihood of winning a project, simulation of scenarios to understand changes in win rate given changes in pricing, and independent methodologies based on type of business (projects, purchasing agreements, or day-to-day purchases). The deliverable consists of a point of view of the degree to which our sales would be affected for a range of surcharge increases and what section of our market we should expect to be affected most.
Abstract:

My main internship project revolved around Herman Miller’s LiveOS initiative. This experience gave me exposure to the world of Cloud Computing, Data Warehousing, Data Visualization. I even got the opportunity to create a separate data pipeline to track user activity metrics collected from IoT sensors. Using a combination of AWS Serverless technologies and Python, I was able to collect data that was ingested from a source and transform it into actionable insights and integrate that data into their current mobile platform via an API.
Abstract:

PURPOSE: The purposes of this study were to:

1) utilize the elasticity and dynamism of Amazon AWS to scale up with minimal cost
2) demonstrate the advantages of distributed computation on serverless cloud function
3) apply parallelism in data processing to enable the performance at scale
4) reduce the operational cost in data integration

CHALLENGE: Proportional distribution of the data without losing data integrity was the most challenging part of the internship experience. Since it was also tied to the efficient parallelization of process, it is vital for both quality of data and performance of the process.

EXPERIENCE: The most valuable experience was the collaboration with professional cloud engineers. This gave me an exposure to the list of services on Amazon AWS. Beyond, the knowing the tools, the understanding and skill of how to use one or more combination of services to solve

OUTCOME: The learning outcomes involve the method to distribute the data, serialization of binary objects as a key to decentralize the computation along with distributed data and thorough understanding on high-throughput serverless computing in AWS environment.

IMPACT: This internship experience reassured the future of enterprise infrastructure is heading toward the direction of the cloud computing. Incorporating the knowledge of cloud services to the learning outcomes from class, data science students can gain the career opportunities.