

About Me

- Global Business Insights Leader
- People & Products Connector
- Data Analytics Strategist
- Data Science Geek
- Relationship Builder who enjoys growing people and company profits through data



Why a Masters? Why Syracuse?

- Desire to supplement field practice with theory
- Exposure to a wider variety of disciplines
- Validate existing experience with universal recognition of my proficiency in the field
- Blended Curriculum with Whitman School of Management



Core Competency	Course	Projects
Describe a broad overview of the major practice areas of data science	IST 687 - Applied Data Science	• All
Collect and organize data	 IST 659 - Data Admin Concepts & Database Management 	Metrics Engine
Identify patterns in data via visualization, statistical analysis, and data mining	MAR 653 - Marketing Analytics	Customer Segmentation
Develop alternative strategies based on the data	 MBC 638 - Data Analysis and Decision Making 	 Process Improvement Project - Reducing Survey Creation Time
Develop a plan of action to implement business decisions derived from analyses	IST 718 - Big Data Analytics	Hops and Hatha Image Recognition
Demonstrate communication skills regarding data and its analysis for relevant professionals in their organization	 IST 772 - Quantitative Reasoning in Data Science 	 State of Vaccination Rates in California School Districts Report
Synthesize the ethical dimensions of data science practice (e.g., privacy).	IST 659 - Data Admin Concepts & Database Management	 Metrics Engine, Personal notes from live lectures

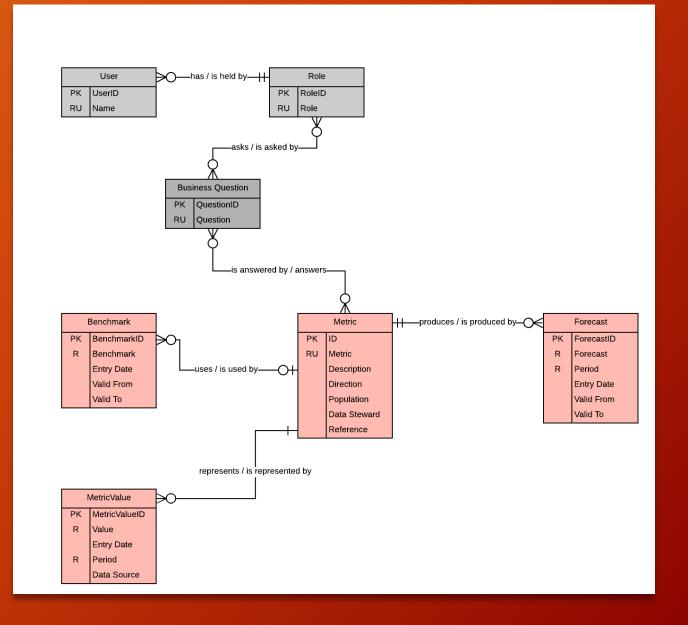
Core Competencies

Describe a broad overview of the major practice areas of data science

 Collection, Preparation, analysis, visualization, management, and preservation of large collections of information (Salz, IST 687 Week 1 Lecture)

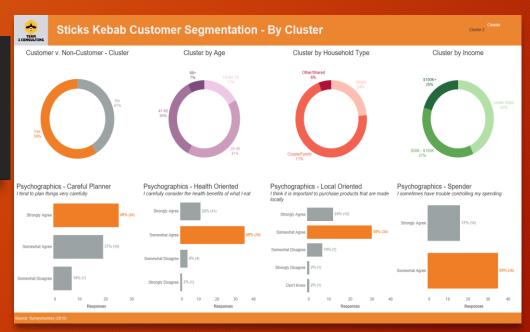
Collect and Organize Data

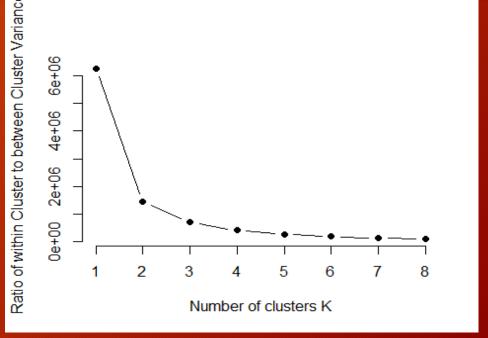
- Metrics Engine IST 659 Data Admin Concepts & Database Management
- Designed to meet the needs of my current employer
- Complex hierarchical business structure, with multiple departments and use cases
- Goal was to link metrics to the vital questions of the business in a fashion accessible to the business
- Evolved into my current work as Technical Lead on this project



Identify patterns in data via visualization, statistical analysis, and data mining

- Customer Segmentation MAR 653 Marketing Analytics
- Group project task was to derive customer segments from regional survey data and provide recommendations based on clusters
- Personal contribution was the preparation, analysis, and visualization of the data





Develop alternative strategies based on the data

- Survey Process Improvement -MBC 638 Data Analysis & Decision Making
- Application of principles in class to real-world problems
- Collected, Prepared, Analyzed and Visualized:
 - Points of failure in existing process
 - Executive impact
 - Reduction in overall survey cost, time to create
 - Control measures to ensure changes worked

Process Improvement Project – Reducing Survey Creation Time Define Measure Oct 21 - Nov 3 Analyze Nov 4 Improve Nov 18 Our existing process for I measured the existing I analyzed this process I ensured that the changes can The team sought to using the following survey development and process by collecting improve the process over time by improve this process by distribution has been exported data from: approaches: instituting a standard framework instituting the following identified as an issue with Ticketed requests for Measures of Central Tendency that determines whether the surveys in JIRA several potential points of · Set a team goal for 2 week process is in control: failure, including: (project management Median: 14.9 (14 day) turnaround on all **Process Control Chart** · Lack of measurement on software) Mode: 13.9 survey requests Survey team feedback Measures of Variation Use data from JIRA to distribution efficacy or (Individual) measure which tickets Range: quality on successful and Standard deviation: were at risk for failing to Decentralized defective surveys meet the goal to help documentation around prioritize work. Survey Creation Distribution survey/stakeholder Requiring teams to High variance indicates an inconsistent responsibilities include more information Lack of standard ______Xbar ____UCL ____LCL on the ticket itself. 100 distribution timeline reducing time the survey Manual quality assurance team spent manually Process Control Chart without a documented entering the information This analysis helped me standard practice (Moving Range) Since implementation, initial prioritize the areas where I signs indicate the changes could provide feedback on may be starting to work! where to approve. Proposed Box & Whisker Plot changes needed to include: ¥ 10.00 A goal set significantly lower than the existing Access to real-time data to -mR chart -mR bar -URL help prioritize tickets during times of high Next Steps: volume (e.g. June) Calculate new SQL after 6 months of new Brainstorm of ways to Old Process New Process CURRENT PROCESS SQL: Review Process Control Charts monthly reduce burden on the As more data become available. Calculate new measures of variation and survey team Jan Mar May Jul Sep Nov a new SQL will be calculated. central tendency after 6 month mark.

Develop a plan of action to implement the business decisions derived from the analyses

- Hops and Hatha IST 718 Big Data Analytics
- Develop Image Recognition features for a fictional business client, powered by neural networks
- Personal contribution was the development of the business case, coordinating team progress, and providing analysis of the results

RECOMMENDATIONS

Feature Identification and Object Recognition are close cousins, but not siblings. Tuning models beyond baseline accuracy becomes a true mix of art and science. A specialized approach is therefore recommended.

Effective model training can be achieved through online image sourcing, however alternate approaches such as pose estimation (identifying joints and body parts) may also be considered.

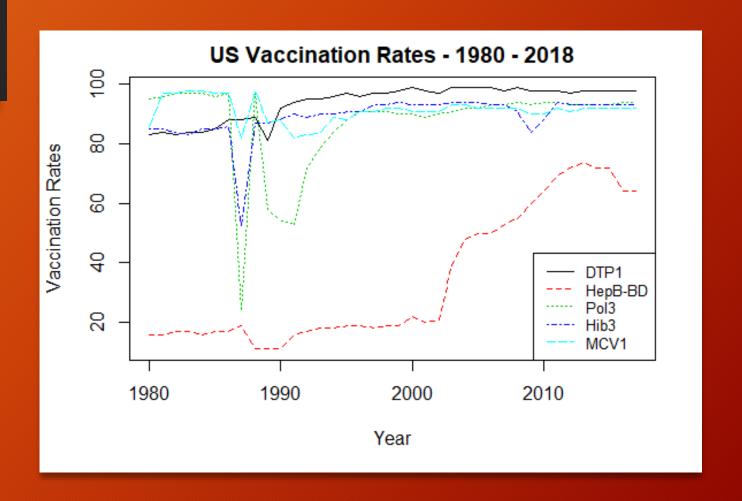
Technologies like AR, Google Lens etc. are backed by powerful engines and skilled engineers - deploying this feature in an app may incur significant costs.





Demonstrate communication skills regarding data and its analysis for relevant professionals

- State of Vaccination Rates in California -IST 772 Quantitative Reasoning in Data Science
- Drafted analytic report intended for legislative audience
- Explored relationships between vaccination reporting completion and student to school ratio
- Utilized multiple methods of statistical analysis (Bayesian, Frequentist) to provide recommendations to a nontechnical audience



Synthesize the ethical dimensions of data science practice

- Metrics Engine Revisited
- Translated business rules into rolebased access controls
- Providing perspective on both the world as it is, and where the world could be.
- Wisdom must be exercised to ensure analysis is not used to perpetuate existing problems
 - Medicine
 - Poverty
 - Law Enforcement
 - Climate Change

Practitioners in data science have an obligation to accurately and faithfully represent the data obtained, in every step of the process. Simply having access to data does not mean it should be used, especially if its use creates negative impact.

Executive - Primary audience for business KPIs, reviews them with managers to gauge department performance

Manager - Relies on KPIs to measure their department's performance, reviews with executives, analysts, and staff.

Analyst - Helps identify trends and produces reporting for managers to use in conversations with executives.

Staff - Individuals who generate the actual business output measured by KPIs.

Final Thoughts

THANK YOU!

Reflecting on my experience as a student in this program, I'm grateful for the opportunity to hone my craft and apply this knowledge to life moving forward. Not only has this program helped improve my data literacy, but it has provided all the necessary tools to collect, prepare, analyze, visualize, manage, and preserve data with great confidence and expanded understanding. I look forward to applying these methods to my remaining work in the semester, and in the opportunities to come.

Please Connect with me on LinkedIn: https://www.linkedin.com/in/mattbeckdata/