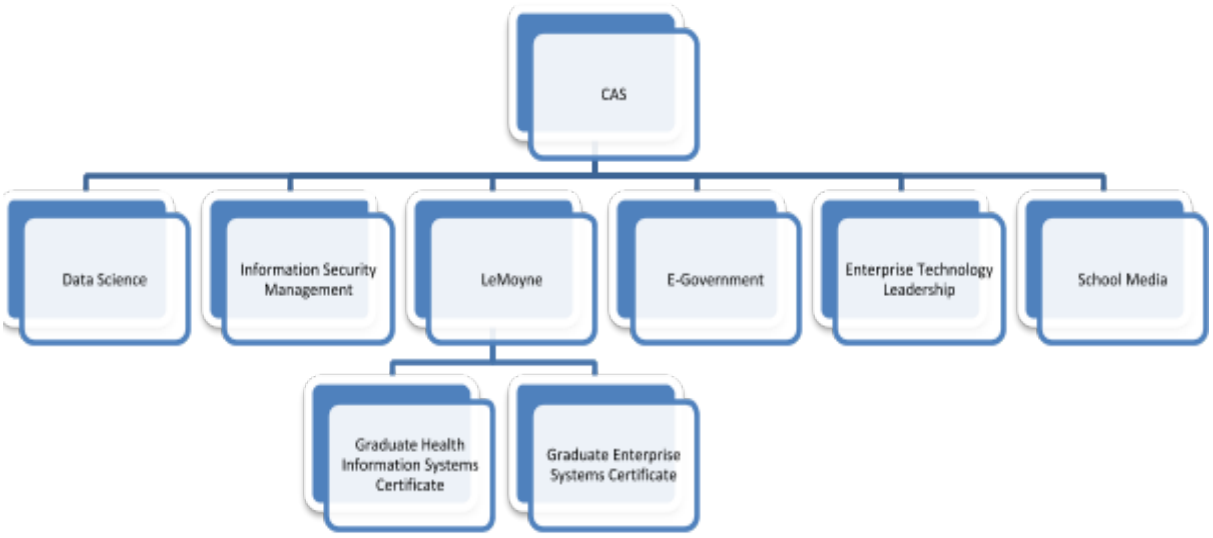
Assignment 1

Research/Reflections on Success and Failure in IM Leadership Management

Certification of Advanced Studies

Certificate of Advanced Studies(CAS) at the Syracuse University helps students of Ischool to add specialized skills to their education. The CAS provides courses specific to a domain that further is so flexible that student can get specialized knowledge about a specific field in a domain or the entire domain, for instance, a student taking CAS in Data Science can take analytics specific courses like Data Analytics and Big Data Analytics or combination of visualization and analytic courses. Below are the different types of CAS provided by the Syracuse University.



CAS in Data Science

The CAS in Data Science is a 15 credit hour certification that focuses on handling huge datasets through all phases of its lifecycle to gain knowledge and insights from it. The 2 core courses focus on the first four level of data lifecycle i.e. capture, process, maintain and analyse while the rest 9 credits focus on 5th stage i.e. communicate.

CAS in Information Security Management

The CAS in Information Security Management(ISM) is a 15 credit hour flexible course that helps student gain expertise in different tools such as information security technology, policy, risk management, and evaluation. The course has 1 core course named Introduction to Information Security Management(ISM) that focuses on the basics of the ISM and the remaining 12 credits focus on two different domain i.e. Management Security and Technology Security.

LeMoyne Partnership[1]

In partnership with Madden School of Business, Ischool students have access certifications listed below or even to individual courses from the certification.

1. **Graduate Health Information Systems Certificate:** Designed to prepare students with complex healthcare related data and ensure security, accessibility and accuracy with respect to Federal Norms.

2. **Graduate Enterprise Systems Certificate:** This 15 credit hour certificate program helps students advance their knowledge of enterprise systems and technology. Market drivers for the Graduate Enterprise Systems certificate program include employment trends and demographics as well as partner requests from national, international and regional employers and academic institutions, and from the Le Moyne College Information Systems Advisory Board. [2]

CAS in E-Government

The CAS in E-Government is a 12 credit hour certificate program that helps students analyze policy and regulatory issues related to eGovernment ICT service delivery in government agencies. The two core courses help students understand the technical design aspects of E-government in public organizations and techniques to manage information and communication technology applications found in public organization E-government systems.

CAS in School Media

The CAS in school media is a 21 credit hour course specially designed for students who already have ALA-accredited master's degree in library and information science and want certification as a school library media specialist.[3]

CAS in Enterprise Technology Leadership

The CAS in Enterprise Technology Leadership is a 15 credit hour course designed by the representatives of The School of Information Studies (iSchool), The College of Engineering & Computer Science, and The Martin J. Whitman School of Management. The 3 core courses will help students learn three foundational skills essential to today's technology leaders, namely Leadership, Project Management and Technology. Remaining six credits focus on a disciplinary area that most aligns with the student's professional and academic interests.

Personal Interest:

My first experience with data was during my internship at Reliance Jio Infocomm and there was no looking back after that. I started taking up certifications and the interest increased every time I learned something new. The CAS in data science perfectly aligns with my interest because the courses that this course provide would help me handle a huge amount of data efficiently and also gain insights from them with the help of courses like Data Analytics, Big data analytics and Data Visualization. Starting from the very basic course of Data administration and Database management to the specialized courses such as Text Mining, Metadata, etc. the course has it all.

Career Analysis for the field of Data Science

Why Data Scientist???

The data volume is exploding. 44,000 searches are been made every second on Google alone. The last 2 years have created more data than the entire previous history of data. Unlike the initial period,

the demand for data scientists is not limited to big companies. All this has led to an increase in the demand for quality data scientists across all big and small industries. Some general facts related to Data Scientist related field are:

1. **IBM Predicts Demand For Data Scientists Will Soar 28% By 2020.**
2. **Glassdoor ranked data scientist as the #1 Best Job in America in 2018 for the third year in a row.** [(4)]
3. **LinkedIn listed data scientist as one of the most promising jobs in 2017 and 2018, along with multiple data-science-related skills as the most in-demand by companies.** [(4)]

28%	**$120,931**	**#1**
Demand Increase by 2020	Average Base Salary	Best Job in America 2016, 2017, 2018

The studies predict that the jobs related to data scientists will likely to increase by 364,000 to the current count of 2,350,000 job listings by 2020.

Job and Internship Opportunities

Job Roles related to Data Science

Many terms like data mining, data cleaning, data analysis, data interpreting etc. used interchangeably, but they actually require a lot of different skill set. Below is the classification of major job roles under Data Science.

Job Opportunities

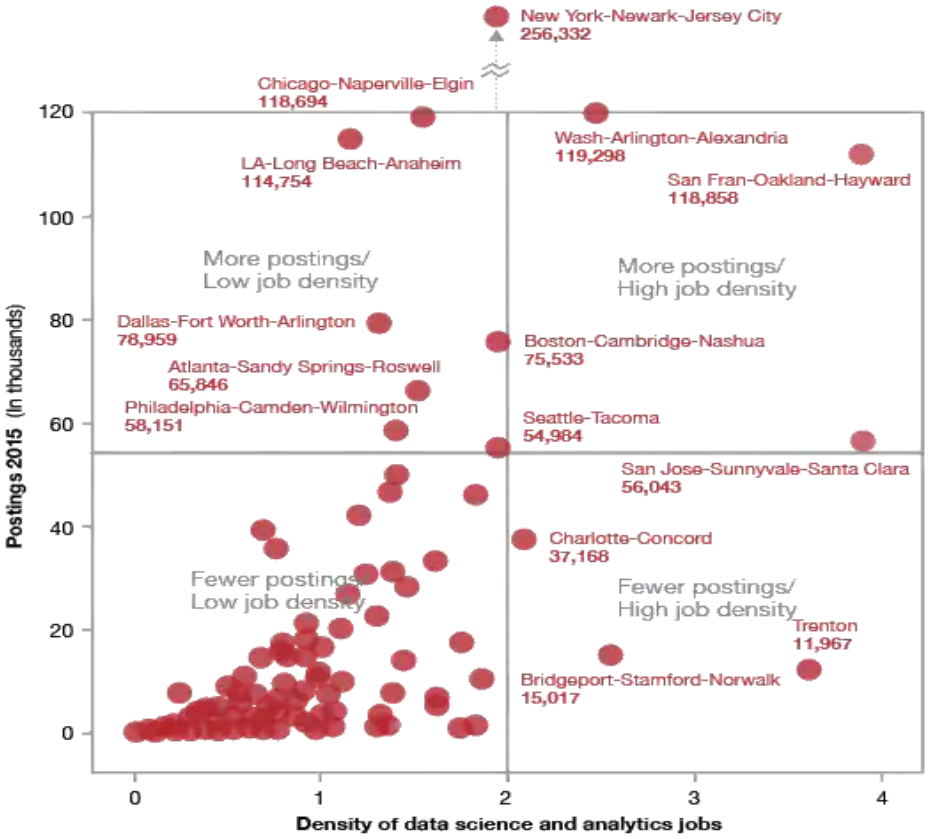
Data Scientist and Data Analytics jobs require multidisciplinary skills with an ability to link analytics and data to create value for the organization. Apart from this, candidates must also have soft skills such as communication, teamwork, creativity etc. Due to all this, data science job take twice as long to fill. The chart below summarises the demand of data science-related jobs, the average time to fill and Average annual salary of each. [(5)]

Table 2. Summary Demand Statistics

DSA Framework Category	Number of Postings in 2015	Projected 5-Year Growth	Estimated Postings for 2020	Average Time to Fill (Days)	Average Annual Salary
All	2,352,681	15%	2,716,425	45	$80,265
Data-Driven Decision Makers	812,099	14%	922,428	48	$91,467
Functional Analysts	770,441	17%	901,743	40	$69,162
Data Systems Developers	558,326	15%	641,635	50	$78,553
Data Analysts	124,325	16%	143,926	38	$69,949
Data Scientists & Advanced Analysts	48,347	28%	61,799	46	$94,576
Analytics Managers	39,143	15%	44,894	43	$105,909

Location-based Data science job opportunities

Washington D.C., Los Angeles, New York, Chicago and San Francisco leads the chart in demand for data skill-related jobs. Employers in Atlanta, Philadelphia and Dallas are among the top employers too. Data Scientist job is the hottest trending job in cities like Boston, San Jose and Seattle. The graph below shows location wise Data Related job demands for the year 2015:[6]



Note: Each dot represents a metro area in the US. For density, we show a four-point scale representing the sum of values for each job category.
Source: PwC analysis based on Burning Glass Technologies data, January 2017.

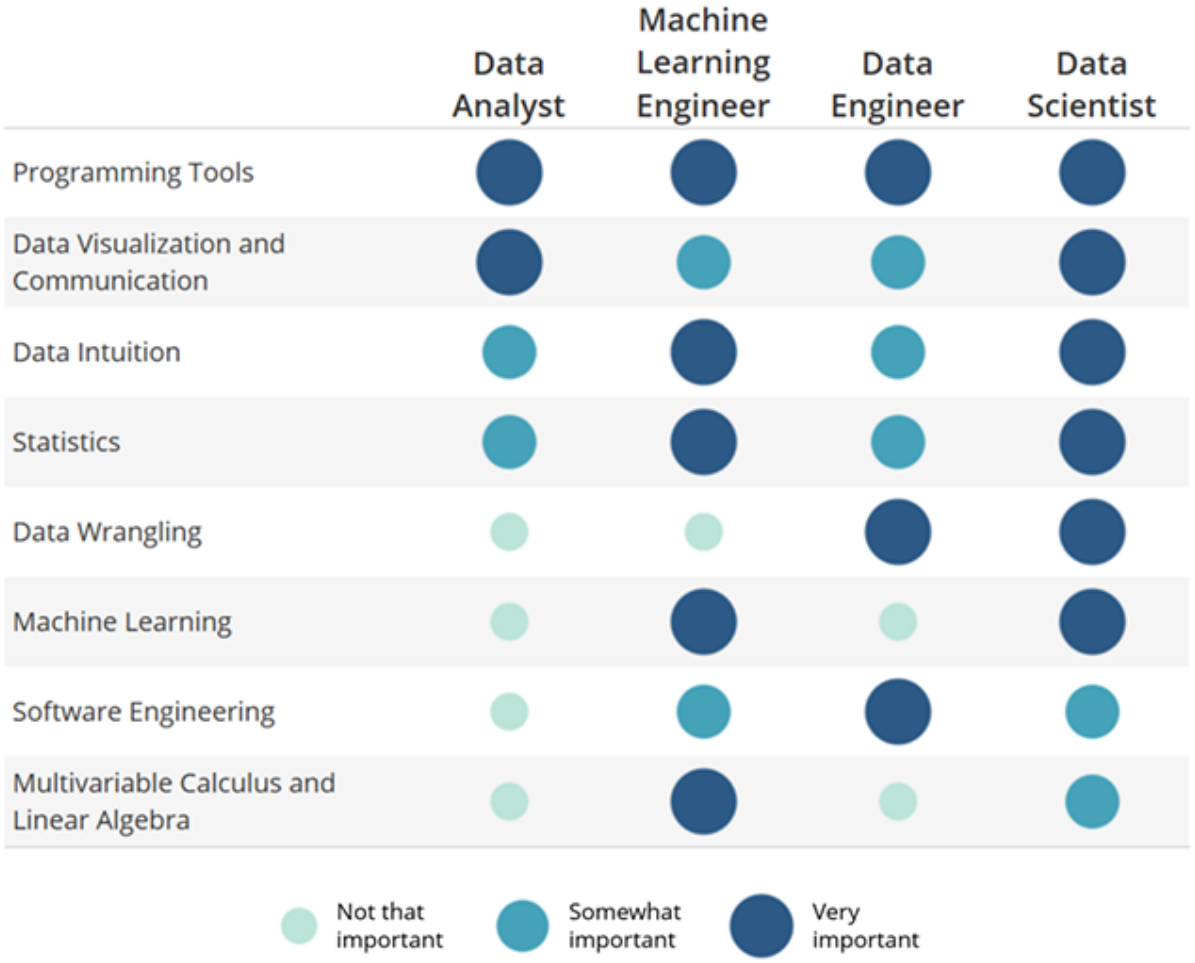
Salary Range

Salary range differs depending on the job role. The starting salary of a data scientist on average is $120,931 while that of a data analyst is $65,470. Data Engineer starts at $137,776 on average. Below is the pictorial representation.

Data Analyst: $65,470
Data Scientist: $120,931
Data Engineer: $137,776

Internship Opportunities

Being ranked as the best job in America, the industry today provides a good number of internship opportunities too. A Data Scientist intern should know where to get data from, how to clean them, transform it and analyze it to get information from it. Must have skill set depends on the job role like for example Data Intuition is a skill specific to a Data Scientist, a data analyst or data engineer may or may not have them. Programming tool knowledge is a skill mandatory for all data scientist related job. A Data Scientist job role has maximum skill set requirement as compared to data engineer and data analyst. The must-have skills for data science related field internships are represented below: [7]



Information Management's Leadership and Management Practices

The success of any field depends heavily on a certain set of practices. These practices have even caused considerable losses or even failure of projects, though it may depend from company to company, there are certain practices that are a big NO and a big YES for any data science-related professional.

Practices that have led to, or can lead to, failure in Information Management's Leadership and Management.

1. **IT Infrastructure**

IT infrastructure plays a vital role in any enterprise because they help keep the data complete, timely and accurate. A modernized IT system helps ensure consistency effectively. According to Forbes Insights/Cisco survey, not even a third of less advanced companies are prioritizing upgrades to their IT foundation. The potential consequence of this could be incomplete and inaccurate underlying data.

2. **Poor Collaboration**

Stakeholders play an important role in the success/failure of any project. Teamwork between all stakeholders, especially between business and IT line of people, plays a vital role in implementing any data-driven project. If people from business and IT line are in sync, key objective from an IT personnel can be outlined, who in turn can advise on what analytics innovation are available to support the business. Poor collaboration can lead to not getting the intended information. (PEOPLE)

3. **Upgrading to latest and greatest**

Artificial Intelligence, Machine Learning Deep Analytics, etc. are some of the hottest analytics buzzwords today. Organizations are investing a huge amount of money around these buzzwords without setting their goals clear on how to make the best use of these technologies. This results in heavy investments and small returns. (PEOPLE and TECHNOLOGY)

4. **Asking loosely defined Questions**

Flawed Hypothesis leads to numerous assumptions that result in inaccurate business cases and inaccurate analysis. It is very important to ask the right question to the right people. A well-defined requirement is the most important requirement of any project and especially for tricky events. The best example of this is trump defeating all the predictions during recent election in the USA. The structure and people are the two components that influence and are influenced by this practice

Practices that define success in IM leadership and management

1. **Investing in both traditional and advanced tools**

Technologies, one of the four components of information management, contribute to a strong foundation for corporate level analytics activities. Investing in a tried and trust analytics tool that helps to ease up the process and increase the accuracy of data can result in better results, huge profits and better utilization of resources.

2. **Solution Expert**

A must-have skill of a Data analytics Leader is the Solution Expert Skill. After identifying the data and determining how to apply analytics a structure has to be determined. The leader is the link between the business teams and the technical teams and it is his responsibility to bridge the gap between the two by defining a structure that relates to both of them.

3. **Innovator and Risk take**r

Technology never stops. There is something new every day that may result in a better process. A Data Scientist leader should be an innovator to think beyond the box. The same old process may result in the same results. Trying different forms may result in something new, some error previously never detected or an outlier ignored resulting in a big profit. This may come along with risks, but a calculated risk is always better than an uncalculated error.

4. **Critical thinking**

For the objective analysis of facts and for formulating opinions, a data scientist must have critical thinking capability. They must understand what is critical in solving a problem and what is extraneous. A data scientist should understand that every problem is different and experience is not the solution to everything. Proper assessment of the problem and considering all possible solutions should be the only ideal way a data scientist should work. Technology, people and process are the two components that are influenced by this success feature of a data scientist because the more the analysis the more the use of better technology and process and greater the involvement of people.

Citation Reference List

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