Master of Science in
COMPUTATIONAL
SCIENCE

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IBM estimate that two and a half million terabytes of data are created every day. This is the equivalent of over 300 million HD movies! Ninety percent of the world’s data was generated in just the past two years. Data is created by: individuals (through social networks and smartphones); machines (through real-time, network connected, sensors – “the internet of things”); business and commerce (e.g. transaction records); science (e.g. bioinformatics, large scale simulation). Much of this data is real time and georeferenced through GPS. Making sense of this vast sea of data for the use and benefit of society is considered an imperative for the coming years, indeed many companies are already strategizing for “big data”.

Computational or data scientists develop solutions for gathering, cleaning, archiving, analyzing and visualizing data for the purposes of making informed decisions.

Some examples of data science projects include:

**Business**: Use historical discounting data from a department chain store at fifty locations to predict how sales vary with department.

**Entertainment**: Perform a sentiment analysis on the tweets about summer blockbuster movies sentiments and use to predict box office takings.

**History**: Develop a geospatial database of conflicts occurring during the Scottish Wars of Independence (1296-1328).

**Science**: Analyze the jpg images of one million galaxies to categorize them according to their morphology.

**Health**: Predict disease likelihood by exploring and correlating patient case history and genetic databases.

**Criminal Justice**: Gather and visualize real time crime statistics for a city for efficient resource deployment.

**Education**: Create a web based dashboard for describing student performance metrics across a school district.
ADMISSIONS CRITERIA

The goal of this graduate degree is to provide you with the computational and data science skills to leverage your undergraduate degree knowledge into the exciting field of data science and analytics. To be considered for the MSCP program, applicants must submit the following:

- Baccalaureate degree from a regionally accredited institution of higher education in areas, such as science, mathematics, business, health, humanities and the social sciences.
- Undergraduate cumulative GPA of 3.0 or better.
- Completed online application including an essay explaining why the applicant wishes to work in the computational and data science arena and how their career thus far has prepared them. You should highlight any computer skills and any quantitative skills. If applicant is deficient in any skills required for the program, he/she will be asked to take appropriate undergraduate courses before starting the degree.