

MASTER OF SCIENCE IN DATA SCIENCE

The MS in Data Science program is intended to provide a rigorous curriculum to prepare graduates for careers requiring a broader, more technical skillset. The program connects the expertise of two departments, Computer Science and Mathematics and Statistics, into a very exciting interdisciplinary program, which will meet the needs of the 21st century student. Additionally, this program requires all students to gain real world experience either through the data science consulting course or an internship as a non-thesis track student or through original research as a thesis track student.

Data science is a multi-disciplinary field combining techniques from mathematics, computer science, and statistics to organize, analyze, visualize, and extract useful information from data. The field developed in response to the deluge of data present in our daily lives in the 21st century and the high demand for workers and researchers who understand all parts of the data analysis cycle from managing, storing, and cleaning data, to statistical analysis, machine learning, and big data techniques, and the ability to communicate their results effectively to others.

PROGRAM STRUCTURE The MS in Data Science is fully on campus and can be completed in either 3 (non-thesis option) or 4 (thesis option) semesters.

Both the thesis and non-thesis track of the MS Program in Data Science require 30 credit hours to complete.

PROGRAM OUTCOMES Upon completion of the MS program in Data Science, students are expected to have:

- The ability to manage large data sets in preparation for data science analysis.
- A working knowledge of traditional statistical techniques and the ability to apply these methods to wide array of real-world problems.
- The ability to perform a data science analysis from beginning to end while adhering to the principles of reproducible research.
- The ability to program in both the R and Python programming languages.
- Non-thesis track: Students will be required to complete a real-world data science project prior to graduating from this program, either through our offered consulting course, an internship, an independent study, or other appropriate project.
- Thesis track: Students will be required to undertake a research project culminating in a thesis.

FACULTY Data Science faculty are made up of members of the Department of Computer Science and the Department of Mathematics and Statistics. The faculty in these departments consists of committed teachers and accomplished researchers. Several faculty members in these departments have established international reputations in their areas of expertise and have been awarded research grants from prestigious institutions, including the National Science Foundation, the National Institutes of Health, and the Simons Foundation. In addition, many of the faculty members affiliated with the Data Science Program have incorporated undergraduates into their research, several of whom have even co-authored peer-reviewed academic journal articles.

ACTIVITIES

Data Science students are encouraged to attend events in both the Department of Computer Science and the Department of Mathematics and Statistics. Both departments regularly feature invited speakers to give talks on a wide range of interesting topics relevant to aspiring Data Scientists. In addition, Loyola hosts a DataFest each spring, which is a weekend long data analysis event sponsored by the American Statistical Association, where students analyze an interesting, real-world data set. Past data examples have included Ticketmaster, Expedia, and Canadian Women's Rugby tracking data.

CAREER OPPORTUNITIES AND THE FUTURE

Data Scientist command high starting salaries and job satisfaction. Students graduating from this program can expect to find job opportunities in a wide array of fields including, finance, health care, pharmaceutical, tech companies, insurance, marketing, advertising, and the sports industry.

PREREQUISITES

Bachelor's Degree from an accredited institution.
Minimum "B" average in undergraduate coursework.
One year of Calculus equivalent to MATH 131 & MATH 132 or MATH 161 & MATH 162
One course in Introductory Statistics equivalent to STAT 103, STAT 203 or STAT 335.
One course in data structures equivalent to COMP 231 or COMP 271, preferably with R and/or Python.

FINANCIAL AID

The Graduate School has limited funds available for financial assistance. Financial aid from Loyola's Financial Aid Office will not impact your ability to apply for financial aid through the Graduate School. To learn more about these financial aid opportunities, visit LUC.edu/finaid/graduateschool.
Begin the financial aid process by completing your Free Application for Federal Student Aid (FAFSA) at fafsa.ed.gov.

APPLICATION INFORMATION

gpem.LUC.edu/apply

LEARN MORE

APPLY

gpem.LUC.edu/apply

For all application requirements and deadlines, please visit LUC.edu/gpem/info.

CONTACT INFORMATION

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For questions regarding your application or the application process, please contact:

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