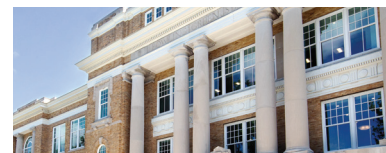
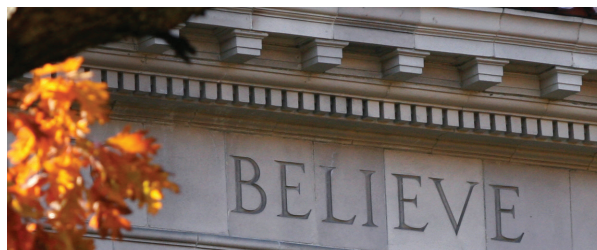


# MASTER OF SCIENCE IN DATA SCIENCE



## Why a Master of Science in Data Science?

A report entitled "The Burtch Works Study: Salaries of Data Scientists & Predictive Analytics Professionals" by the Burtch Works Executive Recruiting was released in 2019. The report has the following key findings:

- 47% of Data Scientists sampled hold at least a MS Degree, while 86% hold a Graduate level degree
- The median salary for an entry level Data Scientist with a MS Degree was \$80,000
- Demand for data scientists has been increasing as more organizations jump on board the "data bandwagon," and while the supply has been improving, it still lags far behind.

## Why a Master of Science in Data Science at BGSU?

The MS in Data Science at BGSU is unique in that it is an interdisciplinary program. Not only does it require a background in Computer Science, Mathematics, and Statistics, it provides an education that continues to blend those three disciplines in a robust fashion, resulting in graduates that have a breadth and depth in all three disciplines.

## Learning outcomes

- Demonstrate competency in the core concepts and techniques of computer science, operations research, and statistics as needed for data science.
- Demonstrate the ability to acquire, clean, and organize structured and unstructured datasets, and to prepare them for appropriate analysis.
- Demonstrate the ability to write original computer code in an appropriate computer language to implement solutions to data science problems.
- Demonstrate the ability to model sources of data, to apply appropriate statistical procedures, and to interpret the results.
- Demonstrate the ability to communicate the results of a project to technical and non-technical audiences.

## Program strengths and uniqueness

- A truly multi-disciplinary program with expert faculty from three departments (Computer Science and Mathematics & Statistics from the College of Arts and Sciences and Applied Statistics & Operations Research from the College of Business) involved.
- Graduates will be prepared to enter industry or begin Ph.D. level work in data science, making the program a wonderful starting point for those interested in eventually pursuing a Ph.D. in the field or furthering their career.

## Professional opportunities

Graduates of the program will be well prepared for Ph.D. studies or professional careers. Those pursuing professional careers can expect to find employment with titles like Data Scientist, Data Analyst, or Data Engineer performing the following tasks:

- Data Acquisition
- Data Cleaning/Transformation
- Analytics
- Prescribing Actions
- Programming/Automation



*"Data Scientist (n.): Person who is better at statistics than any software engineer and better at software engineering than any statistician."*

*- Josh Wills, Director of Data Engineering at Slack*

## FOR MORE INFORMATION

Contact Dr. Rob Green, Assistant Professor and Graduate Coordinator  
College of Arts and Sciences, at [greenr@bgsu.edu](mailto:greenr@bgsu.edu) or 419-372-8782

## Admission requirements

*Prerequisite coursework includes differential, integral, and multivariate calculus, linear algebra, senior-level introduction to probability and statistics, programming skills in high level languages such as C, C++, Java, Python, and understanding of data structures and computer algorithms.*

Applicants must have a minimum GPA of 3.0 on a 4.0 scale (or equivalent). Applicants are required to submit scanned copies of official or unofficial transcripts from all institutions attended. Upon admission, final official or notarized copies of transcripts from all institutions where degrees were earned and diplomas from international institutions must be submitted. They are also required to submit official scores from the Graduate Record Examination (GRE) or the Graduate Management Admission Test (GMAT).

Applicants must also submit three letters of recommendation from faculty or professionals in the field, a statement of purpose, and a current resume.

International applicants are also required to submit scores from the International English Language Testing System (IELTS), the Pearson Test of English Academic (PTEA), or the Test of English as a Foreign Language (TOEFL). Successful completion of ELS 112 will also be accepted for this requirement.

## Cost of tuition

Please refer to [www.bgsu.edu/offices/bursar](http://www.bgsu.edu/offices/bursar) for current information on tuition and fees.

## Financial assistance

Scholarships and stipends are limited and available on a competitive basis. For more information, please contact the coordinator.

Domestic students enrolled in four (4) or more credit hours are eligible to apply for financial aid using the Free Application for Federal Student Aid (FAFSA) to calculate student contribution and financial need. You may apply online at [www.fafsa.ed.gov](http://www.fafsa.ed.gov).

## How to apply

Visit [www.bgsu.edu/graduate/admissions](http://www.bgsu.edu/graduate/admissions).

**The application deadline for fall/spring** is four weeks prior to the start of the term. Applications are reviewed on a rolling basis as soon as all supporting materials have been received.

To be considered for highly competitive and limited funding, students will need to apply by March 15 for Fall or November 1 for Spring admittance.

## Curriculum

### Curriculum for the Master of Science in Data Science (30 credit hours)

• CS 5200: Artificial Intelligence Methods	3 hours
• CS 5620: Database Management Systems	3 hours
• CS 6010: Data Science Programming	3 hours
• MATH 6410: Probability Theory I	3 hours
• MATH 6420: Mathematical Statistics II	3 hours
• STAT 5020: Regression Analysis	3 hours
• STAT 5160: Time Series Analysis	3 hours
• STAT 6440/CS 6440: Data Mining	3 hours
• OR 6610: Linear and Integer Programming	3 hours
• DATA 6910: Data Science Project	3 hours