

# Data Analytics Major

## A GUIDE FOR PRE-MAJORS

WRITTEN BY:

THE DATA ANALYTICS  
ACADEMIC PATH PEERS  
(DA APPS)

## Major Decisions

### WHAT DA STUDENTS LEARN:

- How to create data objects
- How to build and maintain databases
- How to conduct statistical analysis of Big Data
- How to make decisions based on an analysis
- How to communicate findings effectively

### IS THIS MAJOR RIGHT FOR ME?

To answer this question, we recommend getting as much real-world experience as you can - internships/shadowing, BDAA events, workshops, the Ohio Innovation Fund Bootcamp, Coursera/DataCamp, hackathons, DATA I/O, DataFest, other case competitions, undergraduate research, etc.

### WHICH SPECIALIZATION SHOULD I CHOOSE?

Pick your specialization based on what you are interested in and excited by. Your core data analytics knowledge will transfer to any field. For example, you can become a Business Analyst even if you specialize in Social Science Analytics.

### WHAT CAN I DO AS A DOUBLE MAJOR OR MINOR?

Almost anything (except CIS or Statistics)! Data is analyzed and used to solve problems in every company and industry. Do not limit your passion or creativity. If another major/minor interests you, find a way to apply your skills in data collection, analysis, and interpretation to provide insights within that discipline.

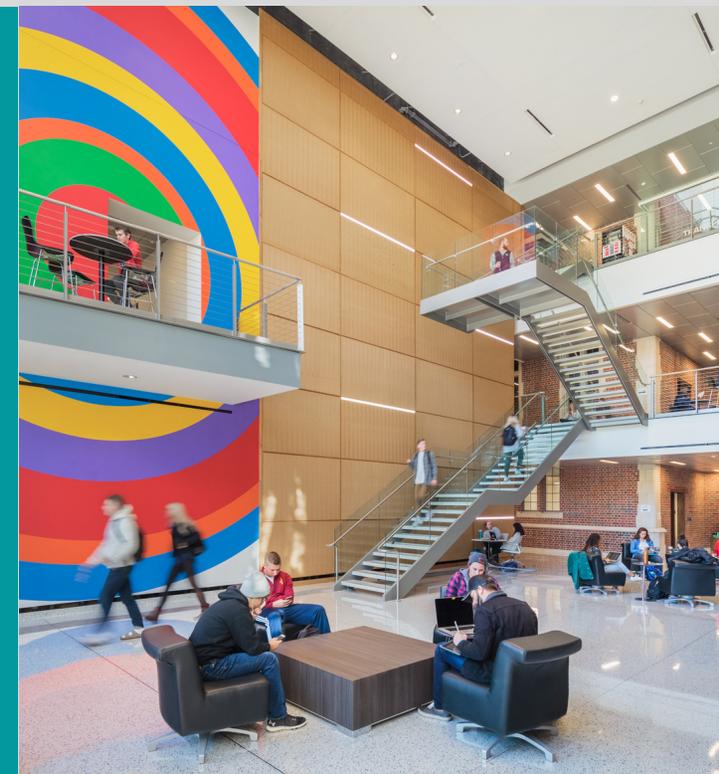
## Major Application

### IF I DO NOT GET ACCEPTED INTO THE DA MAJOR, WHAT OTHER MAJORS CAN STILL LEAD TO A CAREER AS A DATA ANALYST?

It is *not* necessary to major in Data Analytics to become a Data Analyst. In fact, if you realize you love working with data from a specific field or industry, or if you enjoy a specific part of the data analysis process, Data Analytics may not be the best major for you. A different major may more closely align with your skills and abilities...and that's okay! The great thing about Ohio State is that you have options.

### POTENTIAL ALTERNATIVE MAJORS

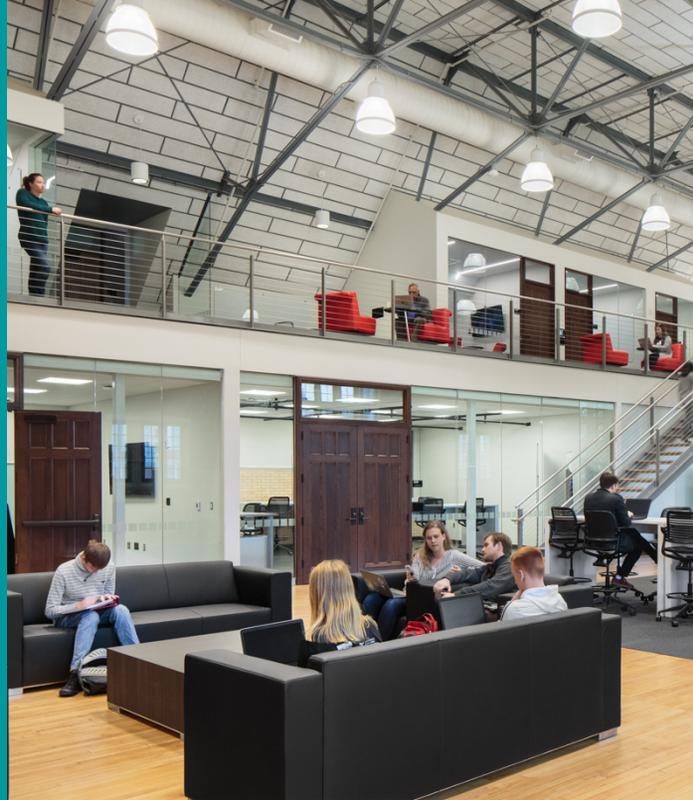
- Statistics + CIS minor – most closely resembles the DA major; few more math courses, few less CSE courses
- GIS + Statistics minor – focus on geospatial data analysis and data visualization
- CIS/CSE + Statistics minor – focus on database creation, data management, data security, and machine learning
- Actuarial Science – focus on analyzing data to predict risk
- Information Systems, Financial Mathematics, or Economics major + Business Analytics minor – focus on financial/business analytics



# Specializations

## BIOMEDICAL & PUBLIC HEALTH ANALYTICS

- Learn how data science applies to healthcare and the medical industry
- **Job opportunities** are growing fast, especially with the current global pandemic, virus research, vaccine trials, etc.
- Biggest benefit – You learn the “why” behind the R code commonly used in statistics courses and gain exposure to graduate-level research, specialized coursework, and graduate students in BMI and Public Health.



## DATA VISUALIZATION

- Emphasizes effective communication; teaches you how to most effectively convey the results of your data analysis to those who do not understand analytics.
- Learn to use multiple data visualization software programs, including Adobe Illustrator, d3, Python, and Tableau, as well as user interface/user experience design
- Biggest benefit – You learn how to tell a story with data. This is the most important part of data analysis and is very applicable in every field and industry.

## BUSINESS ANALYTICS

- Choose to focus in one area of business that interests you (Finance, Consumer Insights, Operations) or make yourself well-rounded by choosing electives in a variety of different areas
- You can take a sports analytics class as an elective!
- Biggest benefit – the 2-semester business analytics industry immersion program. You work directly with a company, analyzing real-world data from that company, and gain insight into what a future career could look like.

## COMPUTATIONAL ANALYTICS

- Choose this specialization if you really enjoy the computer science courses within the Data Analytics major core curriculum.
- Strong focus on algorithms and coding and computer science application of data fundamentals
- Biggest benefit – You learn many different coding languages and practice how to learn new coding languages quickly, which is a skill that is very marketable to employers.

## SOCIAL SCIENCE ANALYTICS

- Learn how data science is used within the social sciences (Anthro, Comm, Econ, GIS, Poli Sci, Psych, Sociol)
- Work with humans as data points – human/environment interactions, social justice/equity issues, demographic data, etc.
- Great degree of individuality and personalization
- Biggest benefit – You conduct your own research or assist a professor with their research, which means you form close relationships with multiple faculty mentors.

# Resources

## CLUBS AND ORGANIZATIONS

- Big Data & Analytics Association
- Sports Analytics Association
- Translational Data Analytics Institute
- Artificial Intelligence Club
- Hack OHIO, Data I/O
- ASA DataFest @ OSU
- Columbus Chapter of the American Statistical Association
- Women in Analytics (annual conference is held in Columbus)
- Society of Asian Scientists and Engineers
- Buckeye Undergraduate Consulting Club



## LEARNING CENTERS

- Mathematics and Statistics Learning Center - free Math and Statistics tutoring
- Residence Life Peer Tutoring - Math, Chemistry, and Physics tutoring
- Dennis Learning Center - help with study skills, time management, test-taking, working in groups, procrastination, etc.
- Professor/TA office hours - utilize these!
- Center for the Study and Teaching of Writing- help with writing assignments
- Buckeye Careers - help with applying for internships, jobs, and graduate schools
- Online coding classes (SoloLearn, Kahn Academy, Coursera) - learn a new coding language or use as additional study materials for CSE classes

# Data Analytics vs. Data Science

## WHAT IS THE DIFFERENCE?

These terms are sometimes used interchangeably, but the difference is **predictive analytics**. Data Analysts do mostly descriptive analysis. Data Scientists do predictive analytics, usually exclusively.

At Ohio State, you will graduate with the skills to be a data scientist. It is important to mention this in your interviews since “data analytics” can have a strong business connotation and is not always a technical role within every company.

**BEST ADVICE:**  
Talk to the DA APPs! We all took the same classes as you and survived!



## HOW DO I FIND THE "RIGHT" ROLE FOR MY KNOWLEDGE AND SKILLS?

If the only technical skills listed in the job description are Microsoft Office/Excel, it is not an analytics role. Look for required skills like R, Python, SQL, SAS, Tableau, logistic regression, and queries.

A bachelor's degree in math, statistics, data analytics/science, or similar field is usually necessary for data analyst jobs. Data Scientist roles usually require a master's degree, but you can sometimes apply if you have a couple years of data analyst experience.



## Questions?

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