THE PROGRAM

At Notre Dame, we recognize the full picture of what it takes to succeed in the field of data science. Our multidisciplinary Online Master's in Data Science program gives students the edge they need to perform at the highest levels of the field by producing three-dimensional data scientists. A data scientist uses quantitative and computational skills to create value from data – transforming and organizing it; analyzing it using computing, mathematics, and statistics; and converting it into valuable knowledge. But a three-dimensional data scientist complements quantitative and computational data skills with the ability to communicate effectively and act ethically. We develop three-dimensional data scientists with an integrated curriculum that combines these three areas.

The 21-month program culminates in a capstone project course we call Data Science Capstone (DSC). This course teams groups of students with industry partners to solve real data science problems.

OUR CLIENTS

The Data Science Capstone seeks to expose our students to a broad range of client organizations. We partner with corporate entities that range from small regional businesses to Fortune 500 companies. We also include governmental and non-profit organizations. The key is that all of these organizations have data and questions to be answered.

COURSE STRUCTURE

Over the course of a 14-week semester, students carry out the full process of answering a data science question. The course exposes students to the realities of data science they may see in the workplace. Students work in teams of four or five under the supervision of a faculty mentor. The team meets with the client representative several times throughout the semester, typically using the Zoom meeting software. Those meetings will include:

- Meet with a client representative to refine and identify the questions of interest. A follow-up meeting with the client will confirm the students' understanding of the question of interest
- Obtain access to the data from the client.
- Give the client a summary of their initial data exploration
- Give the client an initial report on models and preliminary results.
- Give the client a final presentation that summarizes the details of the findings.

Throughout the semester student teams will also meet with the other members of their class and the instructor to share details of their analysis. During these class meetings, students will present their work and discuss the challenges they face in doing the analysis. Faculty members and other students will provide feedback and support.

CONFIDENTIALITY

Confidentiality of client intellectual property will be maintained throughout, and all Notre Dame students, faculty members, and staff will sign nondisclosure agreements with the clients. Client data will be kept secure either on Notre Dame servers or with the client. If the client chooses to house the data on their own servers, they will provide access for the student work team and faculty mentor. The clients are asked to allow the students to produce a non-confidential summary of their work on the project for use in portfolios, resumes, or other professional development.

PROJECT REQUIREMENTS

Organizations that would like to sponsor a project in the Data Science Capstone are welcome to contact the program director. Projects can range from building interactive dashboards to developing machine learning algorithms. The program develops strong skills in modeling and eliciting insight from data. Projects that capitalize on these skills rather than data engineering and database construction are preferred.

When developing possible project ideas, organizations should consider the time frame of the course. Students will have 14 weeks to complete the project, and data for projects should be readily available when the project begins. The organization should also identify a project owner who can interface with the student team and has knowledge of the business question.

Projects are selected in early September for the following January. Program staff will work with partners in October and November to arrange non-disclosure agreements and any legal documents needed. Data transfer or credential creation typically takes place in early November to avoid holiday breaks.

PROGRAM COSTS

There is no direct sponsorship fee for Notre Dame Data Science Capstone partners. The program sees this as an educational opportunity for our students that is a service to our partners. Although there is no direct fee, sponsors are asked to allow sufficient time resources to meet with the teams and provide the requested data.

Click here to learn more and meet with our team!