Master of Science

Data Science and Analytics with a Concentration in Artificial Intelligence and Machine Learning (MS)

Sampath Jayarathna, Graduate Program Director and Computational Data Analytics Concentration Coordinator

This program will provide students with a foundation to use state-of-the-art programming tools and software packages to develop machine learning models. Students will learn how to use data for identifying trends and patterns, solving problems, communicating results, and recommending optimal solutions.

Coursework for the computational data analytics concentration focuses on teaching programming language, the use of complex statistical tools, and mathematical modeling. Graduates will be able to enter data science, analytical, and statistical fields. This program is available on-campus and online.

Artificial Intelligence & Machine Learning

In this concentration, students will prepare to enter rapidly emerging fields related to data science and analytics. The coursework addresses relevant data analytics topics such as text analytics, visualization, algorithms and data structures, and information retrieval. Students will learn computational data analysis, data visualization, and natural language processing. Students will select four courses in consultation with the faculty advisor.

Admission

The requirements for admission to the Master of Science in Data Science and Analytics are as follows:

1. A baccalaureate degree in computer science, electrical and/or computer engineering, mathematics, statistics, information system & technology, or a related field from a regionally-accredited institution or an equivalent institution outside the U.S.; students holding a bachelor's degree in an unrelated field will need competency in topics related to basic statistics and computer science.
2. GRE scores with a 50% or better attainment on quantitative reasoning (or GRE-Waiver.pdf (http://catalog.odu.edu/graduate/data-science/data-science-analytics-artificial-intelligence-machine-learning-ms/GRE-Waiver.pdf))
3. Current scores on the Test of English as a Foreign Language (TOEFL) of at least 230 on the computer based TOEFL or 79 on the TOEFL iBT, or IELTS 6.5 overall.

Students with previously completed work at a regionally-accredited institution may submit a request for a maximum of 12 elective graduate credit hours to be transferred into the program. If approved by the admission committee, it will be added to the transcript.

Curriculum Requirements

The program requires 30 credit hours. The curriculum includes two concentrations: computational data analytics and, business intelligence and analytics. A capstone project is required.

Data Science & Analytics Core

Core Requirements		
DASC/CS 620	Introduction to Data Science and Analytics	3
CS 624	Data Analytics and Big Data	3
CS 625	Data Visualization	3
STAT 603	Probability Models for Data Science and Analytics	3
STAT 604	Statistical Tools for Data Science and Analytics	3
Total Credit Hours for Concentration		**12**
Capstone Course		**3**
Total Credit Hours		**30**

Artificial Intelligence and Machine Learning Concentration

Select four of the following:		12
CS 522	Introduction to Machine Learning	
CS 532	Web Science	
CS 550	Database Concepts	
CS 569	Data Analytics for Cybersecurity	
CS 580	Introduction to Artificial Intelligence	
CS 722	Machine Learning	
CS 725	Information Visualization	
CS 733	Natural Language Processing	
CS 734	Introduction to Information Retrieval	
Total Credit Hours		**12**