What is data analytics?

Data analytics is the process of extracting meaning from raw data using anything from a laptop to specialized computer systems. These systems transform, organize, and model the data to draw conclusions and identify patterns, leading to increases in knowledge and market share that have significant implications for an organization’s profitability.

Are there career opportunities?

Data and analytics are integral tools for organizational leaders of all types, and the number of jobs opening in this field increases every day. Whether you plan to be an IT manager, a business leader, or an individual contributor, this field has numerous career opportunities.

Some industries with increasing reliance on big data and analysis include retail, travel, high tech, biotech, and government. Even small to medium-sized businesses find ways to commercialize the data that they already gather to help achieve their missions.

In some cases, the market value of an organization includes the value of their data and their potential to put it to commercial use. The processes of data mining and analysis have grown so much that there is a high demand for professionals who possess the skills to help organizations capitalize on the value of their data.

Master of Science
Information Technology and Administrative Management

The Information Technology and Administrative Management Master of Science degree (MS-ITAM) provides a one-year degree for post baccalaureate students to develop essential skills to enhance organization competitiveness. This unique degree bridges the gap between information technology and administrative management, focusing on leadership, communications, supervision, budget planning, entrepreneurship, and ethics, as well as applied IT management skills in emerging technologies.
IT 682 Enterprise Analytics

Examine the application of data-oriented analysis techniques for business intelligence and organizational decision-making. Students will explore tools to enhance the managerial decision making process such as pivot tables, descriptive statistics, statistical process control for business process improvement, and data models to predict future trends. Topics include:

- Applying common statistical tools to business needs
- Describing and summarizing the data that an organization collects
- Creating data-driven strategies based on past business performance
- Guiding an organization's direction based on likely futures determined through data analysis

IT 684 Approaches to Data Mining for IT Managers

Learn to capture and use important data businesses generate. In companies of any size, data empowers managers to develop optimal business strategies. Equipped with mined and processed data, students will gain strategies for selecting the relevant parts that reveal true business opportunities. Students will:

- Identify data sources from the web, an internal database, or a data stream generated in real time
- Describe various machine learning processes and algorithms
- Assess data for its usefulness in helping to inform business practices
- Mine or select the best parts of a data set that are likely to answer key strategic questions
- Make meaning of the data to help organizational leaders make data-driven decisions
- Use the R scripting language for simple data extraction and analysis

IT 686 Approaches to Data Analytics for IT Managers

Process data to determine its message for the organization. Students will learn data analytics practices for handling a large data set to make it comprehensible. Whether customer patterns, research data, patient records, or retail transactions, all data sets need processing to find the intelligence they reveal and the ways the data can drive an organization's strategy. After this course, students will be able to:

- Assess a data set for obvious trends and patterns
- Categorize data into useful groups using common practices such as clustering
- Apply probability theory to data sets to determine likely future patterns
- Create predictive models of customer behavior through linear methods
- Find hidden meaning in data sets that can guide organizational behavior and direction
- Use Python to write scripts to analyze data sets

IT 688 Reporting Data and Analytics

Derive value from analysis of large data sets and communicate it to key decision makers. Our students will learn best practices for communicating results from their data analysis. After examining questions asked by their organization, they will collect and analyze relevant data sets, then present relevant, timely, comprehensible results. Students learn to:

- Determine the data-related questions that the organization has and the best ways to answer them
- Prepare presentations, including analysis results addressing the organization’s needs and answering its questions
- Build dashboards, both static and dynamic, that present the results of data analysis in real-time or on an on-going basis
- Present data analysis results using a common web-based tool such as Tableau or Microsoft BI

For more information visit: cwu.edu/it-management/ms

Department of Information Technology and Administrative Management