NJIT@JerseyCity - Fall 2019 Courses

CS 634   Data Mining   (Pantelis Monogioudis)

The process of extracting signals from massive amounts of noisy data is a multi-step endeavor that involves, data analysis, visualization, learning algorithms, model analysis and verification. In this course you will learn not only what methods to use at each one of these stages but also, how to design and architect end-to-end pipelines that deliver on your technical and, ultimately, business objectives. Using real-world use cases from Zillow, Uber and other technology companies, you will use Python and cutting-edge open source machine learning libraries and tools to mine massive, publicly available repositories of structured (tabular) as well as unstructured (e.g. natural language) data. The skills acquired in this course are essential for aspiring data analysts or scientists across all data-driven industries.

IS 601   Web Systems Development   (Keith Williams)

This course trains in the development of web-based systems using Python and the Flask web framework. You will learn to program web applications using HTML, CSS, JavaScript and Python. You will learn two of the three most in- demand programming languages, and learn to develop a web based system through an intensive, hands- on project that requires application of real-world problem-solving skills. At the conclusion of the course, you should be able to create a bespoke web interface for a standard internal business application.

Math 661 Applied Statistics   (Andrew Pole)

Extracting information from data is the application of statistical description, analysis, and inference. Businesses, industry, academia, governments face these questions every day, looking for opportunities and seeking solutions for emergent problems: How much bandwidth can that streaming compression technology free up? Will we gain customers if we improve the audio quality? How should we examine performance data from four different designs of a prosthetic limb? What is the reliability of different component manufacturing processes? How do we allocate funding to maximize relief impact ? In this course you will learn basic and advanced mathematical and statistical tools and techniques for extracting information from your data, big or small, and to make quantitatively justified statements about general populations of concern (customers, patients, supply chain choke points, …). You will also use real-world data from many settings in the current leading data analytic environments R and Python to learn how to address these business, research, and social needs.

CS 644   Introduction to Big Data   (David Bader)

Data science is a rapidly emerging discipline at the intersection of machine learning, algorithms, and statistics. Solving real-world problems in domains such as financial services, cybersecurity, and health informatics requires the generation, storage, management, and analytics, on massive data sets. This course will take you on a journey of developing high performance data analytics for massive data sets using accelerated computer architectures, state-of-the-art software frameworks, and real-world case studies. In-depth topics will focus on mathematical modeling, scalable algorithms, and high-performance computing, for fast and practical solutions. Together we will explore real-world data modeling and prediction from the Data Science Design Manual and learn How 45 Successful Companies Used Big Data Analytics to Deliver Extraordinary Results.