MCCORMICK MINOR IN DATA SCIENCE & ENGINEERING

Aug 10, 2022
Agenda

• Introductions
• Program Overview
• Curriculum Requirements
• Applications & Admissions
• Q&A
Who is Eligible

To apply for the next cohort you must

- Be a current McCormick undergraduate student
- Have completed EA 1 before the start of the Fall 2022 quarter.
- Complete CS 150 or 211 or 230 during or before Fall 2022.
- Commit to taking DATA_ENG 200 in Winter 2023.
- Have an expected graduation date no sooner than Spring 2024, when you will take DATA_ENG 300.

Students from ALL McCormick majors are welcome!
Program Overview

• Practical knowledge fundamental to the data science lifecycle.

• Hands-on experience with models and techniques used for collecting, cleaning, and analyzing data

• Learn how to glean insights from data and think critically about data-driven decision making.

• Designed for undergraduate students across McCormick.

• Emphasize statistical and computational skills to glean and act on insights from data.
DATA_ENG 200: Foundations of Data Science

This course will introduce the steps of the data science lifecycle and common tools and techniques for data science. Here are some covered topics from the previous offering:

- Surviving skills
- Preprocessing
- Basic analytics
DATA_ENG 300: Data Engineering Studio

This course will teach students how to build a sustainable data science lifecycle. Here are some of the tentative topics:

• Machine learning
• Large scale processing
• Whole pipeline integration
Data Science Intern
Oracle ★★★★★ 6,568 reviews
United States
Full-time, Internship
You must create an Indeed account before continuing to the company website to apply

Apply on company site

What You'll Bring (Objective Minimum Qualifications):
To be considered for a Data Science Intern position, you must possess the Objective Minimum Qualifications (OMQs) below. Please ensure that your application clearly indicates that you meet these OMQs, either on your resume and/or by uploading additional documents such as a transcript.

- Will be enrolled in a Bachelor's, Master's or PhD degree program in an applied business or quantitative field such as Statistics, Operations Research, Applied Mathematics, Computer Science, Economics, Business Analytics, or equivalent field during the 2023-2024 school year.
- Have completed at least your junior year toward your undergraduate degree, or higher, by summer 2023.
- Have no more than 12 months of professional full-time work experience in the technology field (excluding internships, research and/or teaching assistant roles, and military experience).
- Have academic coursework, projects, internships, and/or research experience with tools needed to execute the more technical aspects of statistical data analysis, including proficiency (e.g., can complete projects without any assistance) in at least one of the following programming languages:
  - Python, Java, R, SQL, PL/SQL
- Have experience through coursework, projects, internships, and/or research with at least one of the following libraries:
  - Numpy, Scipy, Matplotlib, SciKit, TensorFlow, PyTorch, Spark
- Have completed coursework, projects, internships, and/or research in two or more of the following:
  - Algorithms
  - Artificial Intelligence
  - Big Data Query
  - Data Mining
  - Data Modeling
  - Machine Learning
  - Statistical Inference/Analysis

Data Scientist/ML Engineer
McDonald's Corporation ★★★☆☆ 213,693 reviews
Chicago, IL 60607
Full-time

Apply now

Job Company

Qualifications
- BS in Computer Science, Mathematics, Economics, Statistics or a related discipline
- Strong experience in object-oriented programming using Python
- Experience developing, training, and evaluating (supervised/unsupervised) machine learning models such as random forest, SVMs, Naive Bayes, gradient boosting and kNN
- Experience developing, training, and evaluating deep-learning models using deep learning frameworks such as TensorFlow/Keras or PyTorch
- Project experience in computer vision such as object detection, image classification, text localization, OCR and semantic segmentation
- Experience with SageMaker, S3, GCP Compute Engine, Cloud GPUs, Cloud Storage, OpenCV, Boto3
- Experience building models which have been deployed to production, edge deployment preferred
- Strong ability to solve problems and to structure and simplify complex tasks
- Willingness to continue personal development in to stay at the cutting edge of data science
- Ability to build a sense of trust and rapport that creates a comfortable and effective workplace
Curriculum Requirements: DSE Core

- **One course in Statistics:**
  - BME 220, ChemE 312, CIV 306, IEMS 201, IEMS 303

- **One course in Machine Learning:**
  - CS 349, EE 475, or IEMS 304

- **One course in Intro Programming:**
  - CS 150, CS 211, or CS 230

- **One course in Intermediate Programming/Algorithmic Thinking:**
  - CS 214 or CS 217
Curriculum Requirements: Data Studio Sequence

- **DATA_ENG 200: Foundations of Data Science**
  - Offered in Winter 2023, TTh 9:30-10:50

- **DATA_ENG 300: Data Engineering Studio**
  - Offered in Spring 2024, TTh 9:30-10:50

**Important:**
- Registration in DATA_ENG 200 is required in Winter 2023
- Registration in DATA_ENG 300 is required in Spring 2024, unless significant conflicts exist with major program
- If you can’t enroll in these offerings, you are welcome to apply the following year.
Curriculum Requirements: DSE Electives

• Choose 2 electives

• List includes 300-level and 400-level courses from
  ▪ BME, ChemE, CivE, CompSci, ElecE, ESAM, IEMS, MatSci, MechE
Limitations on Double-Counting

• Up to—but not more than—three courses used for the minor can be counted towards your major
  ▪ “Major” means the 16-unit major requirements
  ▪ Courses used for other McCormick requirements—unrestricted electives, basic engineering, etc. are not considered to double count.

• Many choices in the DSE core can count towards basic engineering
  ▪ Might be restricted by basic engineering requirements for your major.
  ▪ Again—choices counted towards basic engineering are not considered to double count.

• Major-specific guidance can be found on the DSE website
  ▪ If you don’t see yours, ask your advisor!
Applications and Admissions

- Aug 1: Applications open
- Aug 31: Applications close
- Sept 7: First-round admissions decisions released
- Sept 14: Deadline to confirm participation
- Sept 16: Waitlist admissions decisions released
- Sept 20: Fall 2022 classes begin

Apply at https://qrco.de/applydse22
Questions?
Still have Questions?

Visit dse.mccormick.northwestern.edu

Email dse@northwestern.edu