Data Science
UNIVERSITY OF COLORADO **BOULDER**

# Recommended Learner Journey: Computer Science

Follow this learner journey if you are skilled in computer science.

## 1. Complete the computer science pathway to earn admission to the degree.

**Data Science Foundations: Data Structures & Algorithms**
(3 credits)

Algorithms for Searching, Sorting & Indexing
Trees & Graphs: Basics
Dynamic Programming, Greedy Algorithms

## 2. Complete your vital skills for data scientists courses.

**Vital Skills for Data Scientists**
(4 credits)

Data Science as a Field
Cybersecurity for Data Science
Ethical Issues in Data Science
Visualization Fundamentals

## 3. Complete core & elective courses in any order.

**Data Science Foundations: Statistical Inference**
(3 credits)

Probability Theory: Applications for Data Science
Statistical Inference for Estimation in Data Science
Statistical Inference & Hypothesis Testing in Data Science Applications

**Data Mining Foundations & Practice**
(3 credits)

Data Mining Pipeline
Data Mining Methods
Data Mining Projects

**Statistical Modeling for Data Science**
(3 credits)

Modern Regression Analysis in R
ANOVA Experimental Design
Generalized Linear Models & Nonparametric Regression

**Machine Learning**
(3 credits)

Introduction to Machine Learning: Supervised Learning
Unsupervised Algorithms in Machine Learning
Introduction to Deep Learning

**Databases**
(2 credits)

Relational Database Design
The Structured Query Language (SQL)

**Elective Courses**
(9 credits)

See **Curriculum** page for details. More electives coming soon.