DATA AND
ARTIFICIAL INTELLIGENCE

PURDUE UNIVERSITY

Applied Data Science with Python

Powered by simplilearn

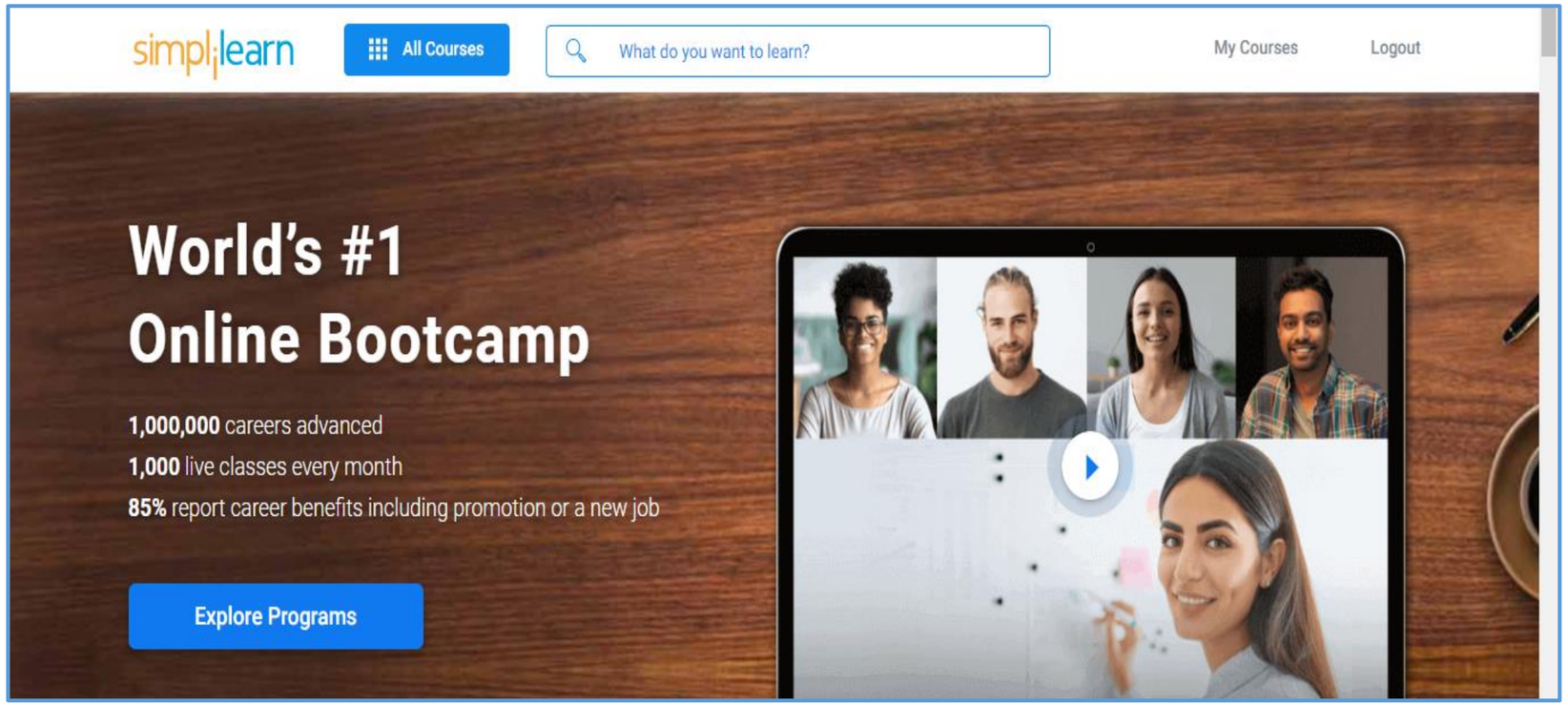
DATA AND
ARTIFICIAL INTELLIGENCE

Program Introduction

About Simplilearn

Simplilearn

Simplilearn has focused on its digital economy skills for over a decade. It is now the world's most popular online bootcamp.



Simplilearn

Simplilearn provides:

- Live virtual classes (LVCs)

- Self-paced learning content

- Interactive labs

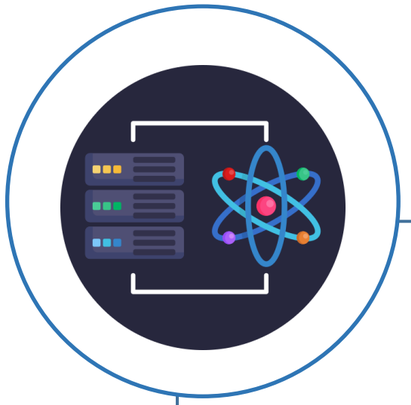
- Real-time, scenario-based projects

Introduction to Applied Data Science with Python

Powered by simplilearn

PURDUE UNIVERSITY

Applied Data Science with Python

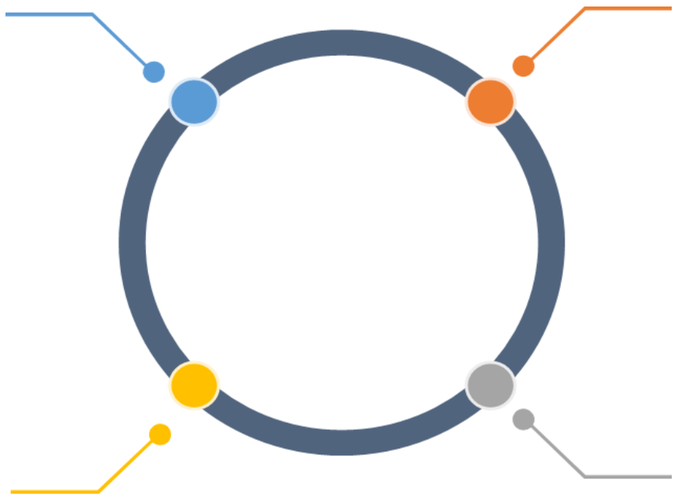


- Data science with Python is a blend of scientific methods, processes, algorithms, and systems to discover the hidden patterns in raw data.
- It uses techniques and theories from mathematics, statistics, computer science, domain knowledge, and information science to build a model.
- Data science with Python practitioners use machine learning and artificial intelligence algorithms to draw inferences from data that support businesses, build products to assist humans in various fields, such as healthcare, finance, security, and entertainment, and automate tasks that require human intelligence.

Benefits of Applied Data Science with Python

Automates tasks:
Data science uses historical data to automate repetitive tasks.

Is versatile:
Data science can be used in numerous applications.
It provides an opportunity to work in various fields.

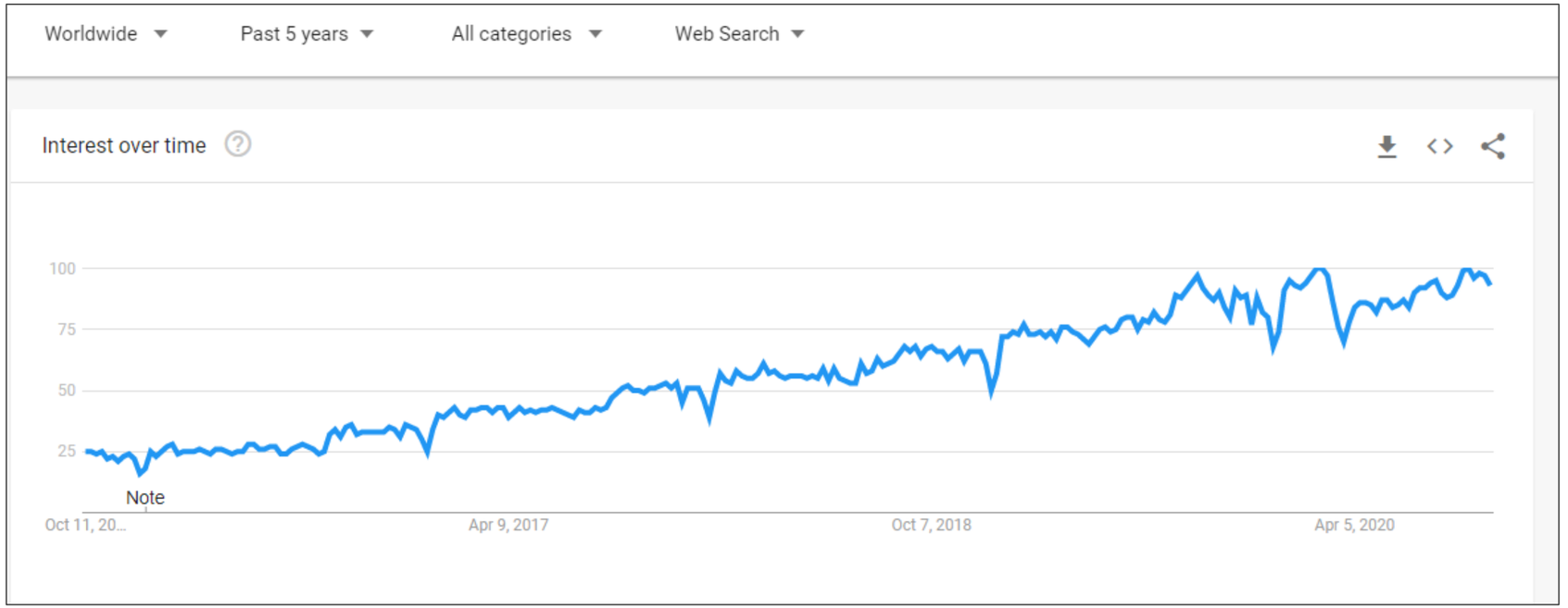


Handles data:
It allows users to handle large amounts of data.

Improves data:
It prepares and examines the data and converts it into a better format.

Demand for Data Scientists

The demand for data scientists is rapidly increasing. Data science is expected to continue to grow significantly in the future.

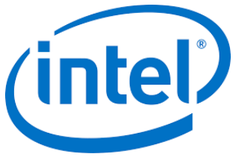


Search trend for data scientists in the last five years

Source: https://trends.google.com/trends/?geo=US

Companies Hiring Data Scientists

There are many companies around the globe that hire data scientists by the dozen. These include:



Simplilearn Program Features

Program Features

The blended learning program is a combination of:

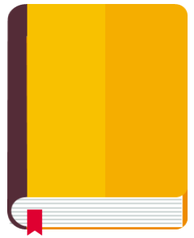
Self-paced learning content

Live virtual classes

Hands-on exercises

Program Features

The program contains:



Theoretical concepts

Case studies

Integrated labs

Projects

Program Features

Class sizes are limited to foster maximum interactions.

Learning Path

Target Audience

Anyone who aspires to be a data scientist must have an understanding of programming in any of the popular languages. The target audience includes:

- Programmers
- Software developers
- Analysts
- Learning enthusiasts

Data Scientist

For example, an associate programmer who recently graduated as an engineer can become a data scientist after completing this program.

Associate programmer

Data scientist

NumPy matplotlib scikit learn TensorFlow

Seaborn

Learning Path

1. Course Introduction
2. Introduction to Data Science
3. Python Libraries for Data Science
4. Statistics
5. Data Wrangling
6. Feature Engineering
7. Exploratory Data Analysis
8. Feature Selection

Learning Path: Lesson 1

Course Introduction

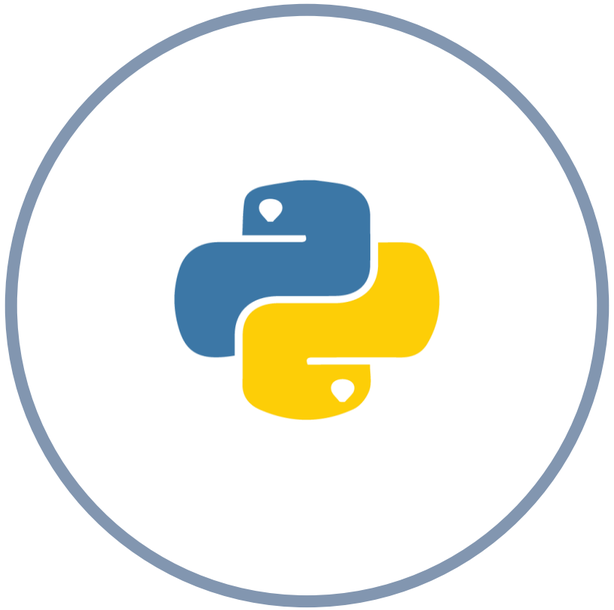
- Gives an overview of this program’s features
- Explains the learning path
- Outlines the program components

Learning Path: Lesson 2

Introduction to Data Science

- Helps understand:
  - Basics of data science
  - Responsibilities of a data scientist
  - Applications of data science

Learning Path: Lesson 3



Python Libraries for Data Science

- Provides the use of Python library
- Lists various Python libraries such as:
  - Pandas
  - NumPy
  - Matplotlib
  - SciPy

Learning Path: Lesson 4

Statistics

Helps understand:

- Linear algebra
- Basics of statistics
- Probability distribution function
- Advanced Statistics

Learning Path: Lesson 5

Data Wrangling

- Implements data extraction and data wrangling
- Performs feature engineering

Learning Path: Lesson 6

Feature Engineering

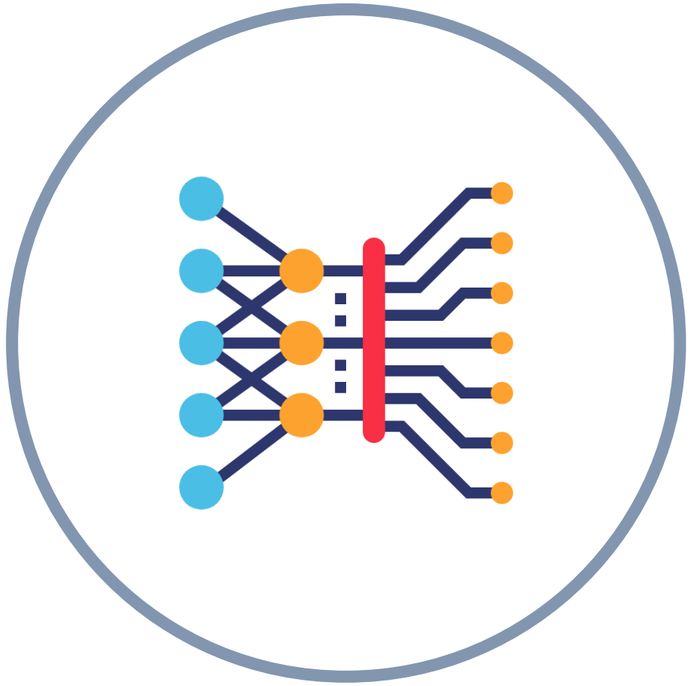
- Performs feature engineering techniques like:
  - Data imputation
  - Scaling
  - Binning
  - Grouping operations

Learning Path: Lesson 7

Exploratory Data Analysis

- Learn about data exploration and various types of plots, such as:
  - Box and whisker plot
  - Bar chart
  - Column chart
  - Line chart
  - Scatter chart
  - KDE plot

Learning Path: Lesson 8



Feature Selection

- Techniques for dimensionality reduction
- Need for factor analysis

Program Components

Program Components

E-books: All lessons are available as PDF files to download and use as quick reference guides

Assisted practices: To help you develop abilities that will make you an asset to any business

Assessments: There are over 100 questions to test your knowledge of the concepts covered

Projects: Lesson-end and course-end projects to develop your data science skills by solving real-life, industry-based projects

Let’s Get Started