Here is a comprehensive learning plan for data science in 2 months:

Month 1: Foundations and Fundamentals

Week 1:

Main topics to cover: Introduction to data science, Python basics, NumPy, Pandas

Recommended resources: Codecademy's Python course, DataCamp's Introduction to Python for Data Science, NumPy and Pandas documentation

Practical exercises: Complete Codecademy's Python exercises, work on projects using NumPy and Pandas, such as data cleaning and manipulation

Week 2:

Main topics to cover: Data visualization, Matplotlib, Seaborn

Recommended resources: DataCamp's Data Visualization with Python, Matplotlib and Seaborn documentation

Practical exercises: Create visualizations using Matplotlib and Seaborn, practice creating different types of plots

Week 3:

Main topics to cover: Statistics and probability, hypothesis testing

Recommended resources: Khan Academy's Statistics and Probability course, Stat Trek's Hypothesis Testing tutorial

Practical exercises: Work on statistical analysis problems, practice hypothesis testing using Python

Week 4:

Main topics to cover: Machine learning basics, scikit-learn

Recommended resources: scikit-learn documentation, Machine Learning Crash Course by Google

Practical exercises: Implement simple machine learning models using scikit-learn, practice with datasets

Monthly Project:

- Description: Create a data visualization project using a dataset of your choice

- Skills applied: Data cleaning, visualization, and basic statistical analysis

- Estimated time: 10-15 hours

Monthly milestone: Have a solid understanding of Python, NumPy, Pandas, and data visualization

Self-assessment task: Complete a quiz on Python, NumPy, and Pandas to assess your understanding

Month 2: Advanced Topics and Applications

Week 1:

Main topics to cover: Advanced machine learning, deep learning

Recommended resources: Machine Learning Crash Course by Google, Deep Learning book by Ian Goodfellow and Yoshua Bengio

Practical exercises: Implement advanced machine learning models using scikit-learn, practice with deep learning using TensorFlow or PyTorch

Week 2:

Main topics to cover: Natural language processing, text analysis

Recommended resources: NLTK documentation, spaCy documentation

Practical exercises: Work on text analysis projects using NLTK and spaCy, practice with natural language processing tasks

Week 3:

Main topics to cover: Big data, Hadoop, Spark

Recommended resources: Hadoop and Spark documentation, Big Data University courses

Practical exercises: Work on big data projects using Hadoop and Spark, practice with scaling data processing

Week 4:

Main topics to cover: Advanced data visualization, Tableau

Recommended resources: Tableau documentation, DataCamp's Advanced Data Visualization course

Practical exercises: Create advanced visualizations using Tableau, practice with interactive dashboards

Monthly Project:

- Description: Create a machine learning project using a dataset of your choice

- Skills applied: Machine learning, data preprocessing, and model evaluation

- Estimated time: 15-20 hours

Monthly milestone: Have a solid understanding of advanced machine learning, deep learning, and big data

Self-assessment task: Complete a project on machine learning or deep learning to assess your understanding

Key Milestones

Week 4 of Month 1: Complete a data visualization project

Week 8 of Month 2: Complete a machine learning project

Week 12 of Month 2: Complete a comprehensive project that integrates all learned skills

Advanced Topics

Topic 1: Reinforcement learning

Subtopics: Markov decision processes, Q-learning, Deep Q-Networks

Resources: Reinforcement Learning book by Sutton and Barto, Deep Reinforcement Learning course by Sutton

Topic 2: Generative models

Subtopics: Generative Adversarial Networks (GANs), Variational Autoencoders (VAEs)

Resources: Generative Models course by Stanford, GAN and VAE tutorials on TensorFlow

Resource Links

Codecademy's Python course:
https://www.codecademy.com/learn/learn-python

- A comprehensive course on Python basics and data science applications

DataCamp's Introduction to Python for Data Science:
https://www.datacamp.com/courses/intro-to-python-for-data-science

- A course on Python for data science, covering NumPy, Pandas, and visualization

NumPy and Pandas documentation: https://numpy.org/doc/ and https://pandas.pydata.org/pandas-docs/stable/

- Official documentation for NumPy and Pandas

Community and Support

Kaggle: A platform for data science competitions and learning

Reddit's r/learnpython and r/datascience: Communities for learning Python and data science

Data Science subreddit: A community for data science discussions and feedback

Assessment and Evaluation

Suggested methods for tracking progress: Keep a learning journal, track project completion, and participate in online communities

Key performance indicators: Completing projects, passing quizzes, and receiving feedback from mentors or peers

Final project or exam details: Complete a comprehensive project that integrates all learned skills in the last week of the learning period

Additional Tips

Time management strategies: Allocate 2 hours per day, 7 days a week, for learning and practice

Recommended pace and intensity: Balance theory and practice, with 1 hour of theory followed by 1 hour of practice

Strategies for maintaining motivation: Join online communities, find a study buddy, and celebrate small milestones

"Believe you can and you're halfway there." - Theodore Roosevelt