**1. Build Foundational Skills (3–4 months)**

**Programming (Python/R):**

* **Python**:
  + Free: [Automate the Boring Stuff with Python](https://automatetheboringstuff.com/)
  + Guided: [Python for Everybody (Coursera)](https://www.coursera.org/specializations/python)
* **R** (if applicable):
  + Free: R for Data Science

**Data Analysis:**

* **Python Libraries**: Focus on pandas, numpy, matplotlib, seaborn.
  + [Data Analysis with Python (IBM)](https://www.coursera.org/learn/data-analysis-with-python)
  + Practice datasets: Kaggle Datasets, [UCI Machine Learning Repository](https://archive.ics.uci.edu/ml/index.php)

**Statistics/Math:**

* Free: [Khan Academy (Statistics and Probability)](https://www.khanacademy.org/math/statistics-probability)
* Guided: [Introduction to Statistics (Coursera)](https://www.coursera.org/learn/probability-statistics)
* Interactive: [Brilliant.org](https://brilliant.org/)

**2. Dive into Bioinformatics (3–5 months)**

**Genomics/Bioinformatics Basics:**

* Courses:
  + [Bioinformatics Specialization (Coursera)](https://www.coursera.org/specializations/bioinformatics)
  + [Genomic Data Science Specialization (Coursera)](https://www.coursera.org/specializations/genomic-data-science)
* Hands-On Tools:
  + Install and use [Biopython](https://biopython.org/) for sequence analysis.
  + Work with NGS data using tools like [Galaxy](https://usegalaxy.org/).
  + Learn RNA-Seq data analysis: Introduction to RNA-Seq (Harvard)

**Databases:**

* Familiarize yourself with:
  + [NCBI](https://www.ncbi.nlm.nih.gov/) (BLAST, GenBank, PubMed)
  + [Ensembl](https://ensembl.org/)
  + UCSC Genome Browser

**Specialized Tools/Skills:**

* BLAST and alignment tools: [NCBI BLAST Tutorial](https://www.ncbi.nlm.nih.gov/books/NBK279690/)
* Bioinformatics in R: Learn DESeq2, edgeR, and ggplot2.

**3. Advanced Data Science & Projects (4–6 months)**

**Machine Learning:**

* Courses:
  + [Machine Learning (Andrew Ng)](https://www.coursera.org/learn/machine-learning)
  + Python Machine Learning by Edureka
* Libraries:
  + Practice with scikit-learn, TensorFlow, and PyTorch.

**Deep Learning (Optional):**

* [Deep Learning Specialization (Coursera)](https://www.coursera.org/specializations/deep-learning)
* Bioinformatics-focused tools:
  + [DeepChem](https://deepchem.io/) for drug discovery.

**Projects:**

* Use open datasets:
  + Cancer research data: The Cancer Genome Atlas (TCGA)
  + Genomics data: [1000 Genomes Project](https://www.internationalgenome.org/)
* Examples:
  + Analyzing prostate cancer gene expression data.
  + Predicting drug-target interactions using machine learning.

**4. Networking and Job Preparation (Ongoing)**

**Networking:**

* Join communities:
  + [BioStars](https://www.biostars.org/) for bioinformatics discussions.
  + [r/Bioinformatics](https://www.reddit.com/r/bioinformatics/) on Reddit.
* Conferences:
  + ISMB (Intelligent Systems for Molecular Biology)
  + [AACR Annual Meeting](https://www.aacr.org/)

**Job Prep Resources:**

* Resume:
  + Tailor it using templates: Indeed Career Guide
* Practice:
  + LeetCode for coding challenges.
  + [Data Science Interview Prep](https://www.interviewquery.com/)