MASTER AIML – COMPLETE LEARNING ROADMAP

PHASE 1 — Python Foundations for Data (1–2 weeks)

1. NumPy – numerical computing

2. Pandas – data manipulation

3. Matplotlib – plotting

4. Seaborn – statistical visualisation

5. Plotly – interactive visualisation

6. SciPy – scientific computing

7. Statsmodels – statistics, time series

PHASE 2 — Core Machine Learning (2–3 weeks)

8. Scikit-learn – classical ML

9. XGBoost – boosting models

10. LightGBM – fast boosting

11. CatBoost – boosting for categorical data

12. Imbalanced-learn – imbalanced datasets

13. SHAP – explainable AI

14. Optuna – hyperparameter tuning

PHASE 3 — Deep Learning Foundations (3–4 weeks)

15. PyTorch

16. TensorFlow

17. Keras

18. JAX

19. FastAI

20. ONNX

PHASE 4 — Computer Vision (2 weeks)

21. OpenCV

22. Pillow

23. Albumentations

24. scikit-image

25. torchvision

26. facenet-pytorch

PHASE 5 — Natural Language Processing (2–3 weeks)

27. NLTK

28. spaCy

29. Gensim

30. Transformers

31. SentenceTransformers

32. TextBlob

33. TfidfVectorizer

PHASE 6 — Data Engineering (2–3 weeks)

34. SQLAlchemy

35. PyODBC

36. BeautifulSoup

37. Scrapy

38. Requests

39. Pydantic

40. Polars

PHASE 7 — Big Data & Distributed Computing (3–4 weeks)

41. PySpark

42. Dask

43. Ray

44. HiveQL

45. Hadoop basics

PHASE 8 — MLOps & Deployment (3–5 weeks)

46. FastAPI

47. Flask

48. Streamlit

49. MLflow

50. BentoML

51. Airflow

52. Docker

53. Kubernetes

PHASE 9 — Advanced Topics (2–3 weeks)

54. NetworkX

55. PyTorch Geometric

56. Faiss

57. Annoy

58. HDBSCAN

59. Prophet

TOTAL TIME: 4–6 months (optimised)