

The AI career *field notes*

Four practical paths into modern AI — with the skills, projects, and tiny habits that make each one real.

01

AI ENGINEER

Build useful AI systems

02

ML ENGINEER

Make models reliable in production

03

DATA SCIENTIST

Turn messy data into decisions

04

AI PRODUCT MANAGER

Turn capability into customer value

Use this as a map, not a cage.

Pick one direction for the next 8–12 weeks.

PROVIDED BY CREATOR

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AI Engineer

The builder who connects models, software, data, and a real user problem.

1

Foundations

WEEKS 1-3

Get fluent enough in Python and the web stack to move without fear.

- Python: functions, typing, virtual environments, APIs, async basics
- SQL + data handling with pandas; Git, testing, and clean README habits
- Ship a tiny API with FastAPI or a Next.js route

2

Model fluency

WEEKS 4-7

Understand what a model can and cannot do — then wrap it in useful behavior.

- Embeddings, structured output, tool calling, RAG, evaluation sets
- Prompt design as interface design: constraints, fallbacks, citations
- Learn latency, token cost, rate limits, and privacy trade-offs

3

Production projects

WEEKS 8-12

Build one end-to-end AI feature that feels like a product, not a toy.

- Project idea: support copilot with retrieval, feedback buttons, and eval dashboard
- Add auth, logging, retries, streaming UI, and a human handoff path
- Write a one-page architecture note: inputs, failure modes, metrics

MY MARGIN NOTE

A working demo beats a perfect notebook. Put your project in front of five people before you add another feature.

ML Engineer

The systems thinker who makes models reproducible, observable, and dependable.

1

Core ML

WEEKS 1–4

Build intuition from data to loss function to measurable performance.

- Linear/logistic regression, trees, boosting, clustering, neural network basics
- Probability, statistics, optimization, bias–variance, leakage, calibration
- Implement one algorithm from scratch, then compare with scikit-learn

2

Data + training

WEEKS 5–8

Treat data pipelines and experiments as first-class engineering work.

- Feature pipelines, labeling strategy, train/validation/test design
- Experiment tracking, model registry, reproducible configs, data versioning
- Project idea: demand or churn model with a documented error analysis

3

MLOps + serving

WEEKS 9–14

Move a model from notebook to a monitored service.

- Docker, batch vs online inference, CI checks, canary releases
- Drift, data quality, latency, cost, alerting, rollback plans
- Deploy an API and write the runbook someone else could actually use

MY MARGIN NOTE

Your superpower is not only training a model. It is making the same result happen again — and knowing when it gets worse.

Data Scientist

The investigator who turns uncertainty, evidence, and context into better decisions.

1

Question craft

WEEKS 1-3

Learn to frame ambiguous business questions as testable analytical questions.

- SQL: joins, windows, CTEs, cohort and funnel analysis
- Descriptive statistics, sampling, confidence intervals, experiment basics
- Practice writing assumptions and defining a success metric before analysis

2

Analysis + story

WEEKS 4-8

Make patterns visible and explain what the data does not prove.

- Python analysis with pandas; visualization with matplotlib or Plotly
- Segmentation, anomaly detection, causal caveats, missing data
- Project idea: product funnel deep-dive with a clear recommendation

3

Decision systems

WEEKS 9-12

Pair analysis with action, measurement, and stakeholder trust.

- Design an A/B test or quasi-experiment; estimate impact and uncertainty
- Build a dashboard with definitions, owners, and refresh expectations
- Present the “so what?” in five minutes, then document the appendix

MY MARGIN NOTE

Ask “what decision changes if this is true?” before you ask which chart or model to use.

AI Product Manager

The translator who turns model capability into a safe, valuable, repeatable customer experience.

1

User + problem WEEKS 1-3

Find a painful workflow where AI can create a measurable advantage.

- Interview users; map the current workflow, workarounds, and “do nothing” cost
- Write a crisp problem statement and non-AI baseline
- Define success: user outcome, business outcome, quality bar, guardrails

2

AI product sense WEEKS 4-7

Choose the right level of automation and make uncertainty visible.

- Understand prompting, retrieval, agents, evals, latency, cost, and human review
- Create a capability matrix: automate, assist, suggest, or stay manual
- Project idea: PRD + clickable prototype + eval rubric for one workflow

3

Launch + learning WEEKS 8-12

Ship a narrow version, learn from behavior, and earn trust.

- Design onboarding, feedback, fallbacks, abuse handling, and audit trail
- Plan pilot metrics, qualitative review, model-quality checks, and rollback
- Write the launch memo: who it is for, what it does, and what it refuses to do

MY MARGIN NOTE

A model is not a feature. The feature is the whole loop: user intent, system behavior, trust, feedback, and outcome.