NO PREP

New Jobs That Didn't Exist 5 Years Ago (Prompt Engineer, AI Trainer)

Includes: Student reading, case study, differentiated questions, teacher key

Name: Period: Date:

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Every Technology Wave Creates New Work

It is easy to focus on the jobs that AI is disrupting, and that disruption is real and significant. But the history of major technological transitions offers an important counterpoint: every major technology wave has created new categories of work that did not exist before, often in numbers that eventually offset or exceeded job losses in displaced categories. The automobile industry eliminated blacksmith and carriage-making jobs but created millions of positions in auto manufacturing, repair, fuel distribution, road construction, and driving-based services. The internet eliminated many roles in physical retail, printing, and media but created entire new industries in e-commerce, digital advertising, web development, and social media. The AI era is following this pattern, with new job categories emerging at a pace that is difficult to track. Some of these roles, like machine learning engineer or data scientist, have existed in rough form for a decade. Others are genuinely new, born from the specific capabilities and limitations of large language models and other AI systems that became commercially widespread beginning in late 2022. Understanding what these new roles involve, what they pay, and what training pathways lead to them is increasingly important for students planning their careers.

Prompt Engineer: The Job That Surprised Everyone

When OpenAI released ChatGPT in November 2022, few people expected that 'writing better questions for an AI' would become a career. Within months, companies were posting job listings for prompt engineers: people whose primary responsibility was to design, test, and refine the instructions given to AI systems to produce better outputs. Early prompt engineering roles at major technology companies listed salaries ranging from $175,000 to $335,000, which generated enormous media coverage and interest. The reality of prompt engineering is more

nuanced than those eye-catching salaries suggest. At its core, prompt engineering is about understanding how AI models process instructions, what kinds of inputs produce high-quality outputs, and how to systematically improve prompting strategies for specific use cases. A prompt engineer working on a customer service chatbot needs to understand both the technical characteristics of the underlying AI model and the specific business context (customer complaints, product knowledge, escalation procedures) well enough to write prompts that produce accurate, consistent, and appropriate responses. The role combines technical literacy, writing skill, and domain expertise in unusual proportions.

AI Trainer: Teaching Machines to Be Better

AI training refers to the process by which human workers review, rate, correct, and improve AI outputs so that the AI system learns from those judgments. When you use a chatbot that seems to have gotten better at avoiding certain mistakes over time, it is often because human trainers reviewed thousands of examples of those mistakes, labeled them as incorrect, and the AI's training process incorporated that feedback. This work is sometimes called Reinforcement Learning from Human Feedback (RLHF), and it is central to how modern AI systems are made more accurate and aligned with human values. AI training roles vary widely in their sophistication. At one end, basic data labeling (classifying images, rating text responses as helpful or unhelpful) can be done with limited technical background and is often performed by contractors through platforms like Scale AI or Amazon Mechanical Turk. At the other end, specialized domain trainers (medical professionals reviewing AI-generated clinical content, lawyers reviewing AI legal reasoning, teachers evaluating AI-generated curriculum) command significantly higher wages because their expert judgment is what makes the AI better in specialized fields. The demand for this kind of expert human feedback is expected to grow significantly as AI systems are deployed in high-stakes fields.

AI Ethics and Trust & Safety Roles

As AI systems have been deployed more widely, the problems they create — harmful outputs, bias against specific groups, misuse for scams and misinformation — have created demand for professionals who work specifically on preventing these harms. AI ethicists analyze the potential social impacts of AI systems before and after deployment. Trust and safety specialists design the policies and content moderation

systems that prevent AI from being weaponized. Red teamers — professionals who try to deliberately break AI systems by finding their failure modes — help companies identify vulnerabilities before bad actors do. These roles typically require a combination of technical understanding and expertise in fields like philosophy, law, social science, or psychology. They are among the most intellectually interesting and genuinely consequential jobs in the AI industry, and they are growing rapidly as governments, regulatory bodies, and companies face increasing pressure to demonstrate that their AI systems are safe and fair.

AI Product Manager and Implementation Specialist

Bridging the gap between AI technology and its application in business are AI product managers and implementation specialists. An AI product manager works to define what an AI tool should do for a specific business context — what problems it should solve, what users it serves, how success is measured, and what failure modes to watch for. This role requires understanding both the technical possibilities and limitations of AI and the business needs of the people using it. It sits at the intersection of technology and strategy, and it commands significant salaries in most markets. Implementation specialists help organizations adopt and integrate AI tools into their existing workflows. When a hospital decides to implement an AI clinical decision support system, or when a law firm deploys an AI legal research tool, or when a school district adopts an AI tutoring platform, someone needs to manage the process of integrating that tool into existing systems, training staff to use it effectively, and troubleshooting the problems that inevitably arise. This work requires a combination of technical familiarity, change management skill, and deep understanding of the organization's operations. The geographic distribution of new AI-era jobs is an important dimension that career advice often overlooks. Prompt engineering, AI ethics, trust and safety roles, and AI product management are heavily concentrated in a small number of metropolitan areas — San Francisco, Seattle, New York, Austin, and a handful of others where major AI companies are based. Students in smaller cities or rural areas may find that the most visible and best-compensated AI-era roles require relocation. However, the implementation specialist category is significantly more geographically distributed: every hospital that implements an AI clinical system, every school district that adopts an AI tutoring platform, and every manufacturing plant that deploys AI quality control

needs local implementation expertise. These roles exist everywhere that AI tools are being adopted, not just in tech hubs. Remote work has also changed the geography of some AI roles significantly. Prompt engineers, content trainers, and AI ethics analysts can often work remotely, meaning that geography is a less definitive barrier to accessing these careers than it would once have been. The trajectory of new AI job creation is also worth understanding. In the first phase of any major technology wave, most new jobs are concentrated among people building the technology. In subsequent phases, jobs spread to people implementing the technology in specific industries, then to people who use the technology as a routine part of work across every field. The current AI wave is transitioning between phases one and two, meaning that implementation and adoption-focused roles are growing rapidly while still paying premiums that will likely compress as skills become more widely available. Students who enter these growing fields now will have the advantage of early expertise and will build track records at a moment when that expertise is genuinely scarce.

Key Information: New AI-Era Jobs

Detail	Information
Prompt engineer origin	Emerged as a formal role after ChatGPT's November 2022 release; salaries ranged $175K-$335K early on
Core prompt engineer skills	Understanding AI model behavior, writing skill, domain expertise, systematic testing
RLHF	Reinforcement Learning from Human Feedback — human trainers rate outputs to improve AI systems
Basic vs. expert AI training	Basic labeling (low pay, limited skill); domain expert training (high pay, specialized knowledge)
AI ethicist role	Analyzes potential social harms of AI systems; requires technical + philosophy/law/social science background
Red teamer	Deliberately tries to break AI systems to identify vulnerabilities before deployment

Detail	Information
AI product manager	Defines what an AI tool should do for a specific business context; technical + strategic skills
Implementation specialist	Integrates AI tools into existing organizational workflows; change management + technical fluency

Case Study: Priya Finds an Unexpected Path

Priya studied English literature in college and graduated with strong writing skills but a lot of anxiety about her career prospects. Her advisor told her that AI might make writing-intensive jobs harder to find, and she spent her senior year worrying. Then, while doing research for a senior project on technology and society, she stumbled across job listings for prompt engineers and AI content trainers. She spent an afternoon reading about the work. A prompt engineer at a healthcare AI company had a background in nursing. A content policy specialist at a major AI lab had a philosophy degree. A curriculum AI trainer working with an education company had been a classroom teacher for eight years. 'They're not hiring coders,' Priya realized. 'They need people who understand how language works, what makes content appropriate or inappropriate, and what good reasoning looks like.' She signed up for a free online course in AI prompting and started building a portfolio of documented prompt experiments. By February, she had her first job offer.

1. Priya's English literature background turned out to be valuable for AI-era roles that she hadn't known existed. Based on the reading, what specific characteristics of her training made her a good candidate for prompt engineering or AI content work?

2. The reading describes a range of AI training roles from basic data labeling to expert domain training. Where on that spectrum would Priya likely land, and why would her pay and responsibilities reflect that position?

Multiple Choice

1. What does RLHF stand for, and what is its purpose in AI development?

    a) Remote Labor for Human Functions — outsourcing AI tasks to human contractors

    b) Real-time Learning with Human Functions - an AI system that learns by watching real humans work

    c) Reinforcement Learning from Human Feedback — a process where human ratings improve AI systems

    d) Rapid Language and Human Feedback — a method for testing AI response speed

2. What distinguishes a domain expert AI trainer from a basic data labeler?

    a) Domain experts have specialized knowledge that enables them to evaluate AI quality in high-stakes fields

    b) Domain experts work on-site at AI company offices while data labelers work from various locations regularly

    c) Domain experts use more advanced computer hardware when labeling data

    d) Domain experts write the AI code while labelers only test completed systems

3. What is the role of a 'red teamer' in AI development?

a) A manager who oversees the team responsible for AI content policy compliance

b) A team member who monitors AI system uptime and handles technical failures in the infrastructure

c) A developer who trains AI on specially curated 'red flag' datasets to identify and prevent bias

d) A specialist who deliberately tries to find and expose AI system failures and vulnerabilities

Matching

Write the letter of the correct definition on the line next to each term.

Term	Definition
1. ___ Prompt engineering	A) A professional who analyzes the potential social impacts, fairness issues, and risks of AI systems before and after deployment
2. ___ AI ethicist	B) The process of categorizing, tagging, or rating AI inputs and outputs so that an AI system can learn from human judgments
3. ___ Implementation specialist	C) A professional who defines what an AI tool should accomplish for a specific business context, measuring success and failure modes
4. ___ Data labeling	D) The practice of designing, testing, and refining instructions given to AI systems to improve the quality and accuracy of their outputs
5. ___ AI product manager	E) A professional who helps organizations integrate AI tools into existing workflows, trains staff, and troubleshoots adoption problems

Fill-in-the-Blank

1. Early prompt engineering job listings at major technology companies listed salaries ranging from $175,000 to _____ dollars, generating significant media attention.

2. AI professionals who deliberately try to break AI systems by finding their failure modes are called _____ teamers.

3. The AI era is following the historical pattern of technological transitions, which suggests that new job categories will eventually _____ or exceed the jobs lost to automation.

Short Answer

Answer each question in 2-4 complete sentences.

1. The reading says prompt engineering requires 'technical literacy, writing skill, and domain expertise in unusual proportions.' Why does this combination matter? What goes wrong if you have technical literacy but not domain expertise, or domain expertise but not technical literacy?

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2. The reading notes that demand for expert human feedback is 'expected to grow significantly as AI systems are deployed in high-stakes fields.' What makes human expert judgment particularly valuable in fields like medicine, law, or education — and why can't AI just evaluate its own outputs?

_____

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3. Historical technology transitions created new jobs, but the reading doesn't guarantee AI will do the same. What factors would determine whether AI creates enough new jobs to offset those it displaces? What would need to be true for the positive scenario to happen?