The AI Technology Stack: Where the Real Career Opportunities Are

By Mahesh Ramanujam, FCA · June 26, 2026 · promptedgrad.com/ai-technology-stack-career-opportunities/

Key Points

1. Everyone rushes to the visible top of the AI stack (chatbots, apps, prompts). The less-crowded layers underneath create thousands of durable careers — ask 'which layer should I build my career in?', not 'which tool should I learn?'.
2. AI is a skyscraper of 8 layers, each depending on the one below — and each with its own careers (see table).
3. **Picks & shovels:** in a gold rush, the merchants selling tools win. Infrastructure layers benefit from every breakthrough above them, not just one app.
4. **India is now in the stack:** the India Semiconductor Mission has 12 approved projects across 6 states (~₹1.64 lakh crore), with ₹8,000 crore more in Budget 2026-27. Micron's Sanand ATMP went operational Feb 2026; the Tata-PSMC Dholera fab targets first silicon late 2026. Hubs: Gujarat, Assam, Odisha, Maharashtra.
5. **India's edge is chip design (Layer 3)** — a long-standing 'fabless powerhouse' with global design centres; manufacturing and packaging (Layer 4) are the new, fast-hiring frontier.
6. **Not an engineer?** A fab is a giant business: it needs CAs, finance, legal, supply-chain, procurement, risk, compliance, and ESG. Government incentives must be modelled, claimed, audited and reported — a natural fit for commerce/CA graduates.
7. **Build 5 skills:** learn AI but don't stop there; understand the semiconductor ecosystem; learn cloud fundamentals; sharpen analytical thinking; and learn how the whole stack fits together.

The 8-Layer AI Stack & Careers

Layer	Example Careers
8 · AI Applications	Software dev, product, UX, AI integration
7 · AI Models	ML, data science, AI research, model evaluation, AI safety
6 · Cloud Infrastructure	Cloud eng, DevOps, networking, data-centre ops
5 · AI Hardware	Computer eng, hardware validation, firmware, systems
4 · Chip Manufacturing	Process, yield, packaging, testing, reliability
3 · Chip Design	VLSI, embedded, digital design, verification
2 · Semiconductor Equipment	Mechanical, mechatronics, optical, service eng
1 · Advanced Materials	Materials eng, chemical eng, manufacturing, QC

Key Takeaway: Do not just learn to use AI — learn what AI depends on. The biggest, least-crowded opportunities sit in the layers beneath the headlines, and for Indian graduates that ecosystem is being built at home right now in Gujarat, Assam, Odisha and Maharashtra. Aim at a layer and a location, and pair business skills with an understanding of the stack.