

HOW TO BECOME AN AI ENGINEER



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SUNDEEPTEKI.ORG

Slides available at sundeepteki.org/talks

INTRO

INDUSTRY

- **AI Researcher, Consultant & Coach**
- Head of AI, Docsumo (B2B SaaS AI startup)
- AI Team Lead, Swiggy (B2C unicorn startup)
- AI Scientist, Amazon Alexa AI (Big Tech)

ACADEMIA

- Fellow in Neuroscience, Oxford
- PhD in Neuroscience, UCL
- MSc in Neuroscience, Oxford
- BE in Electronics Engg, DCE

STARTING UP

- Founder, AI Upskilling platform (skills)
- Founder, EduChroma (career mentoring)
- Founder, Timing Research Forum (research)

OUTLINE

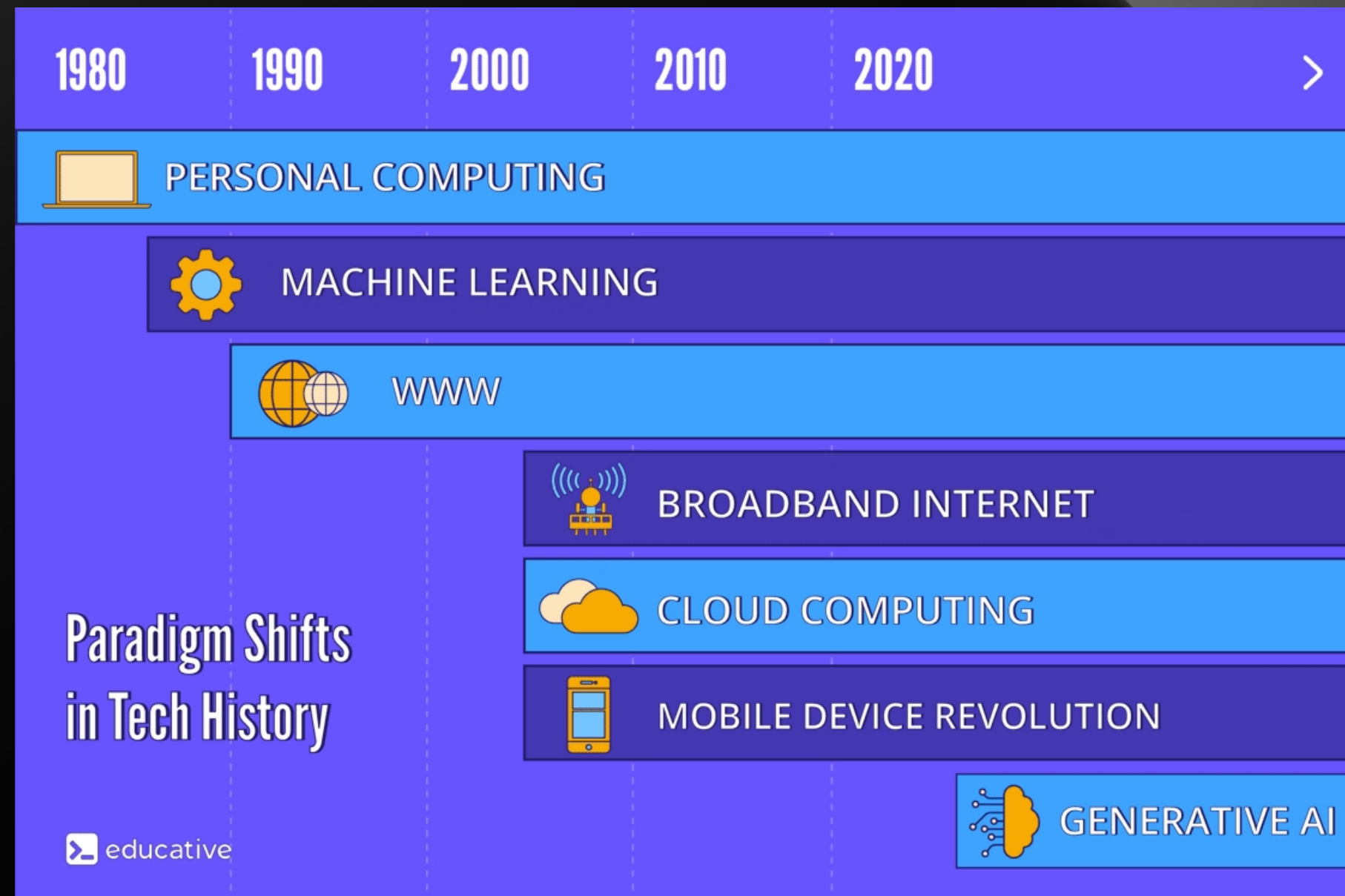
- 1 Evolution of SW Engineering role**

- 2 What does an AI Engineer do?**

- 3 Upskilling to become an AI Engineer**

- 4 Q&A**

EVOLUTION OF THE ENGINEERING ROLE



OS ENGINEER

WEB ENGINEER

MOBILE ENGINEER

CLOUD ENGINEER

ML ENGINEER

DATA ENGINEER

NLP/CV ENGINEER

(GEN)AI ENGINEER

OUTLINE

- 1** Evolution of SW Engineering role

- 2** What does an AI Engineer do?

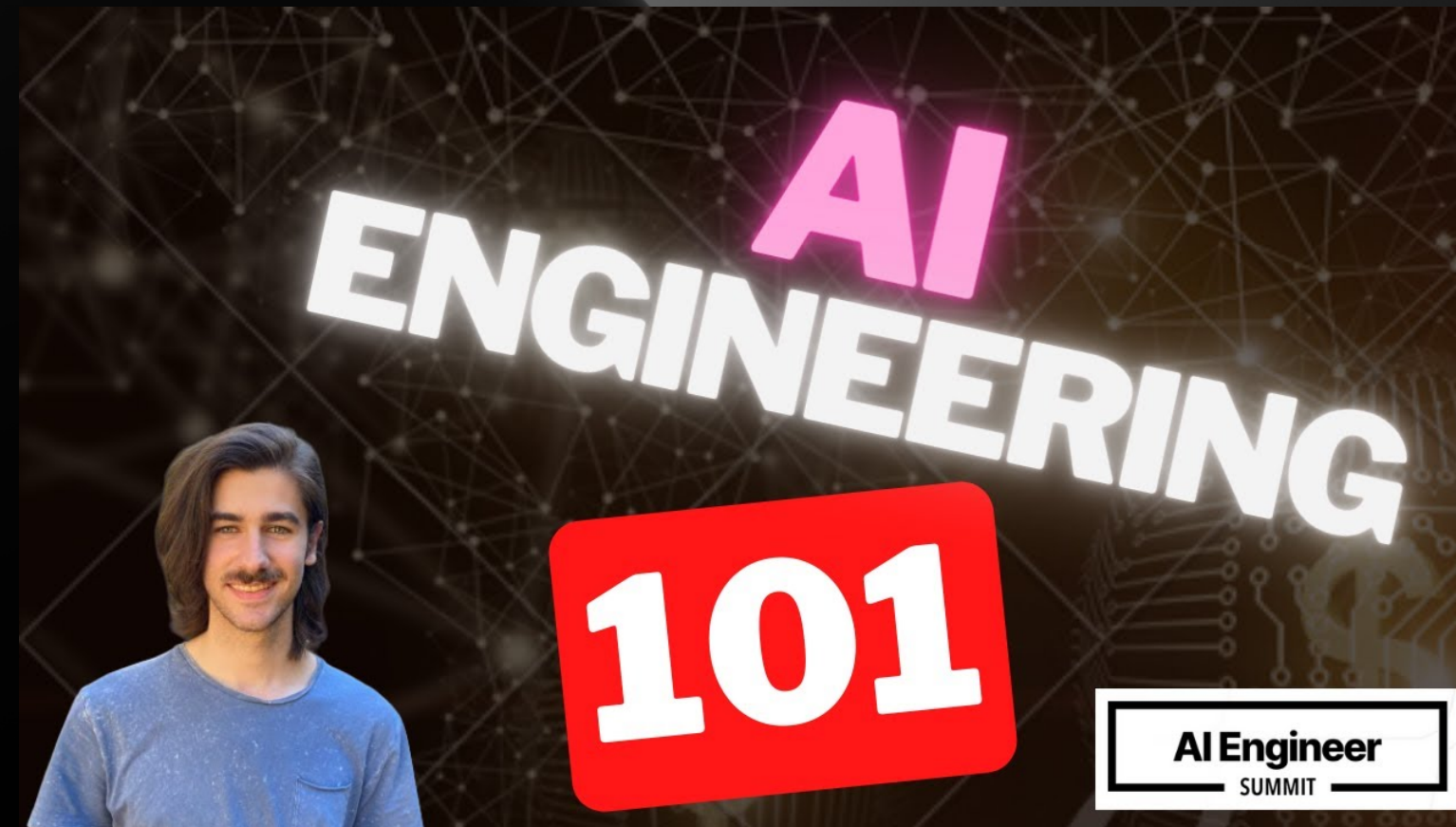
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RESPONSIBILITIES

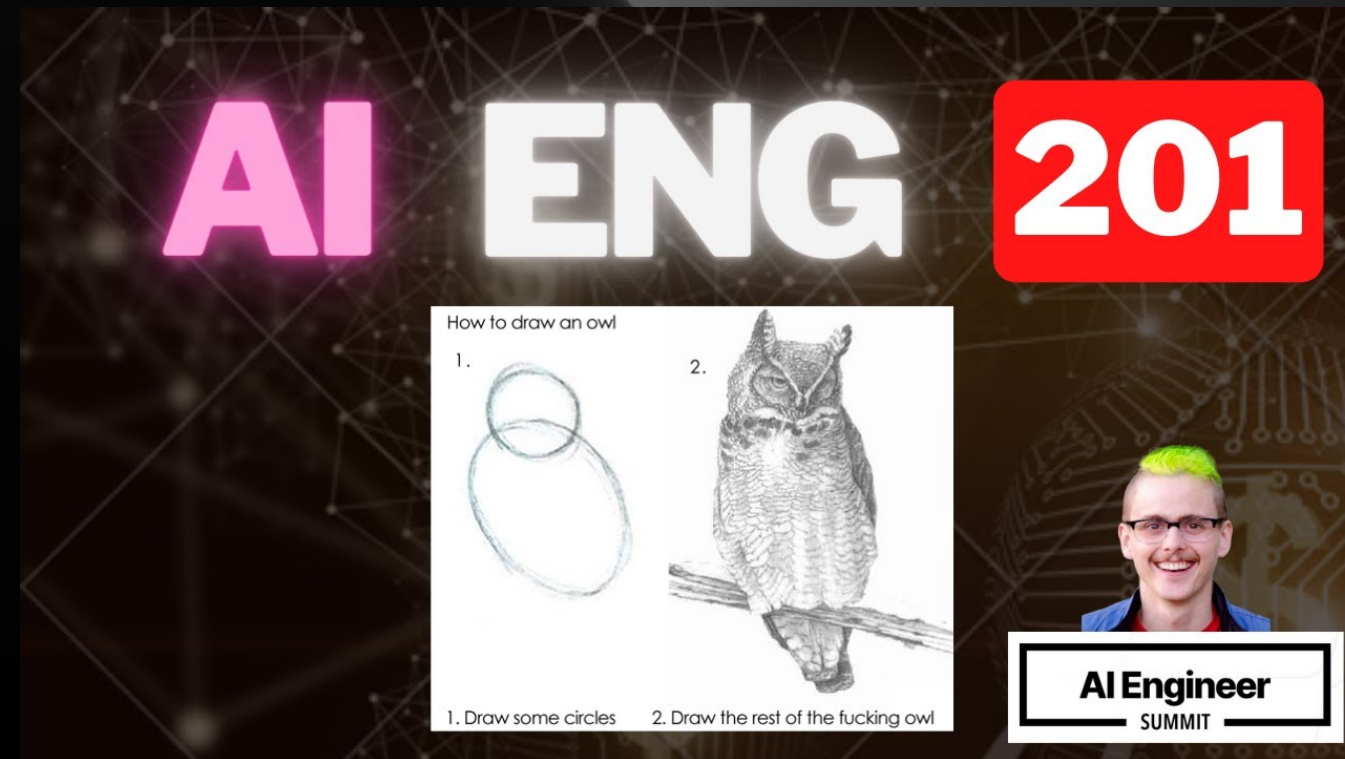
- Design and implement generative AI models, including GPT, LLMs, RAG, Stable diffusion, multimodal models etc.
- Continuously research and apply latest advancements in AI to improve existing models
- Continuously update and refine AI models based on evolving customer feedback and emerging technologies
- Develop and maintain high-quality, scalable, and efficient AI systems
- Build tech stack, tools and infrastructure for AI use cases from concept to production
- Build and evaluate GenAI pipelines including data preparation, prompt engineering, fine-tuning, RLHF etc.
- Stay updated with latest AI advancements in generative AI, LLMs etc.
- Document AI processes and models to enable easier onboarding and clarity for all team members

WHAT DOES AN AI ENGINEER DO?



<https://www.youtube.com/watch?v=C0ZUdFg-iTo>

WHAT DOES AN AI ENGINEER DO?



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OUTLINE

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SKILLS FOR AI ENGINEER

- Data collection
- Data annotation
- Data preparation
- Model training
- Model serving
- APIs
- LLMs, LVMs
- Prompt engineering
- Prompt management
- Fine-tuning methods
- RLHF
- Embeddings
- Vector database
- RAG
- Diffusion models
- Cost-efficient production systems
- Libs: LlamaIndex, LangChain, RAGAS etc.
- Tools: MidJourney, OpenAI, Anthropic, GCP, AWS, Azure etc.

UPSKILLING TO BECOME AN AI ENGINEER

1 BUILDING A FOUNDATION

- Statistics
- Data processing (text, images etc.)
- Machine Learning
- Deep Learning
- Diffusion models
- Large Language/Vision/Multimodal models

2 LEARNING RESOURCES

- Coursera - for ML, DL courses
- DeepLearning.ai - LLM courses by Andrew Ng
- Full Stack Deep Learning & LLM Bootcamp 2023
- Stanford courses - cs221, 231n, 224n, 324
- Made With ML - end-to-end ML + Ops
- Cloud certifications (AZURE, AWS, GCP)
 - <https://learn.microsoft.com/en-us/collections/22zpung43jdyyn>
- <https://www.youtube.com/@aiDotEngineer/videos>

UPSKILLING TO BECOME AN AI ENGINEER

3 BUILDING A PORTFOLIO

- Build your own projects (end-to-end)
- Showcase using Streamlit
- Write/blog about your projects
- Share on X, LinkedIn, Slack, Discord etc.
- Include in CV & share in interviews

4 BUILDING A PERSONAL BRAND

- Share useful content on X, LinkedIn etc.
- Attend in-person meetups
- Attend webinars by relevant companies
- Build digital profile with website/blog

UPSKILLING TO BECOME AN AI ENGINEER

MAKING THE TRANSITION

- Identify suitable jobs and companies
 - Startups
 - MNCs
 - Big Tech
 - Remote roles at US companies
- Evaluate AI use cases in the team
- Analyse the AI team profile
- Build understanding of the business use case and domain
- Build a project on the same to discuss in interviews

- Honestly evaluate your skills - strengths & weaknesses
- Practice relevant skills daily to build confidence

- Aim to apply through employee referrals OR
- Directly contact the hiring recruiter/manager

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GENERAL CAREER ADVICE

- 1 **Develop a learning mindset** - read AI blogs/papers/newsletters; listen to podcasts; talk to seniors and experts
- 2 **Build domain expertise** for AI use cases in fields like e-commerce, finance, education, healthcare
- 3 Optimize for roles at companies where you can **continuously learn and grow**
- 4 Select cos. with **strong and inspiring leaders** with a solid team & mature AI business use cases and tech stack
- 5 Your first job, manager & company has an outsized influence; **surround yourself with the best people**
- 6 **Evaluate culture in teams & orgs**; poor culture does not compensate for higher salary
- 7 **Plan your career at different time scales**: short-term (1-2 years) and longer term (4-5 years)
- 8 **Be open to change**; evolve with the field and think of your **AI career as a marathon vs. a sprint**

QUESTIONS





Connect with me: [@sundeepteki](https://www.instagram.com/sundeepteki)



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