



## so based on your opinion , can you just make a roadmap with the course link as well in tabular format

Here's a practical GenAI roadmap tailored for you as a backend SDE2, with focus + links.

### Phase 1 – Foundations & Concepts

Order	Goal / Outcome	Course	Link	Notes
1	Understand GenAI & LLM basics (tokens, transformers, pretraining, fine-tuning, RLHF, risks)	Generative AI with Large Language Models ( <a href="#">DeepLearning.AI</a> + AWS)	<a href="https://www.deeplearning.ai/courses/generative-ai-with-llms/">https://www.deeplearning.ai/courses/generative-ai-with-llms/</a> <sup>[1]</sup>	Do this first; it gives you the big picture and shared vocabulary.
2	Broader GenAI overview for non-math, product/business angle (optional but quick)	Generative AI for Everyone	<a href="https://www.coursera.org/learn/generative-ai-for-everyone">https://www.coursera.org/learn/generative-ai-for-everyone</a> <sup>[2]</sup>	Helpful for interviews and discussions, but can be skipped if short on time.

### Phase 2 – Hands-On Engineering Track (Main)

Order	Goal / Outcome	Course	Link	Notes
3	Structured, end-to-end GenAI engineering (HF, transformers, RAG, LangChain, capstone)	Generative AI Engineering with LLMs Specialization (IBM)	<a href="https://www.coursera.org/specializations/generative-ai-engineering-with-llms">https://www.coursera.org/specializations/generative-ai-engineering-with-llms</a> <sup>[3]</sup>	Treat this as your main "spine" – lots of labs + a QA/RAG capstone aligned with backend work.
4	Focused practice on building LLM apps with LangChain	LangChain Course for LLM Application Development (Coursera)	<a href="https://www.coursera.org/learn/langchain-course-for-llm-application-development">https://www.coursera.org/learn/langchain-course-for-llm-application-development</a> <sup>[4]</sup>	Deepen LangChain skills: loaders, splitters, embeddings, chains, memory, agents.
5	Apply what you learned: build 1-2 personal projects	Self-designed projects using HF + LangChain + vector DB	—	Use ideas similar to the IBM capstone (internal docs Q&A, log analysis assistant, etc.). <sup>[3]</sup> <sup>[5]</sup>

### Phase 3 – Targeted Skill Boosters (Short Courses)

Order	Goal / Outcome	Course	Link	Notes
6	Solid understanding + minimal hands-on finetuning (LoRA/QLoRA, when to finetune)	Finetuning Large Language Models ( <a href="#">DeepLearning.AI</a> short course)	<a href="https://www.deeplearning.ai/short-courses/finetuning-large-language-models/">https://www.deeplearning.ai/short-courses/finetuning-large-language-models/</a> <sup>[6]</sup> <sup>[7]</sup>	Great to really internalize when/why/how of finetuning beyond the IBM content.
7	Deep dive on embeddings and semantic search (key for RAG)	Embedding Models / Understanding and Applying Text Embeddings	<a href="https://www.coursera.org/partners/deeplearning-ai">https://www.coursera.org/partners/deeplearning-ai</a> (see “Embedding Models” / “Understanding and Applying Text Embeddings”) <sup>[8]</sup>	Strengthens the retrieval side of your RAG systems.
8	Practical vector DB usage	Vector Databases: from Embeddings to Applications / Building Applications with Vector Databases	Browse in <a href="#">DeepLearning.AI</a> catalog: <a href="https://www.coursera.org/partners/deeplearning-ai">https://www.coursera.org/partners/deeplearning-ai</a> <sup>[8]</sup>	Helps you design good retrieval pipelines with Pinecone, Weaviate, etc.
9	Better evals & debugging for LLM apps	Evaluating and Debugging Generative AI	In <a href="#">DeepLearning.AI</a> catalog: <a href="https://www.coursera.org/partners/deeplearning-ai">https://www.coursera.org/partners/deeplearning-ai</a> <sup>[8]</sup>	Useful for production-grade quality and interviews about reliability/observability.

### Phase 4 – Optional Advanced / Career Signaling

Order	Goal / Outcome	Course	Link	Notes
10	Broader, vendor-aligned GenAI dev path	NVIDIA Generative AI and LLM Learning Paths	<a href="https://www.nvidia.com/en-us/learn/learning-path/generative-ai-llm/">https://www.nvidia.com/en-us/learn/learning-path/generative-ai-llm/</a> <sup>[9]</sup>	Good for extra depth and branding on resume/LinkedIn.
11	Formal IBM certificate branding	IBM Generative AI Engineering Professional Certificate	<a href="https://www.coursera.org/professional-certificates/ibm-generative-ai-engineering">https://www.coursera.org/professional-certificates/ibm-generative-ai-engineering</a> <sup>[10]</sup>	Choose if you want an additional named credential beyond the specialization.

If you tell roughly how many hours/week you can invest, a 3–4 month schedule can be laid out on top of this roadmap.

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1. <https://www.deeplearning.ai/courses/generative-ai-with-llms/>
2. <https://www.coursera.org/learn/generative-ai-for-everyone>
3. <https://www.coursera.org/specializations/generative-ai-engineering-with-llms>
4. <https://www.coursera.org/learn/langchain-course-for-llm-application-development>

5. <https://www.credly.com/org/ibm/badge/ibm-generative-ai-engineering-with-llms-specializat.1>
6. <https://www.deeplearning.ai/short-courses/finetuning-large-language-models/>
7. <https://learn.deeplearning.ai/courses/finetuning-large-language-models/lesson/ig7ql/why-finetune>
8. <https://www.coursera.org/partners/deeplearning-ai>
9. <https://www.nvidia.com/en-us/learn/learning-path/generative-ai-llm/>
10. <https://www.coursera.org/professional-certificates/ibm-generative-ai-engineering>
11. <https://www.ibm.com/new/training/unlock-your-generative-ai-potential-with-the-generative-ai-engineering-with-llms-specialization-by-ibm>
12. <https://www.ibm.com/new/training/accelerate-your-generative-ai-expertise-with-the-generative-ai-engineering-with-llms-specialization-from-ibm-on-coursera>
13. <https://www.deeplearning.ai/courses/>
14. [https://www.linkedin.com/posts/omar-abdelhamid-204b0618a\\_generative-ai-engineering-with-llms-specialization-activity-7286744635924779008-uDB3](https://www.linkedin.com/posts/omar-abdelhamid-204b0618a_generative-ai-engineering-with-llms-specialization-activity-7286744635924779008-uDB3)
15. <https://www.deeplearning.ai/short-courses/langchain-for-llm-application-development/>
16. <https://www.ibm.com/new/training/start-a-career-in-ai-explore-ai-programs-from-ibm-on-coursera>
17. <https://learn.deeplearning.ai/courses/finetuning-large-language-models/lesson/ep67b/introduction>
18. [https://github.com/sakha1370/Generative\\_AI\\_Engineering\\_Coursera](https://github.com/sakha1370/Generative_AI_Engineering_Coursera)
19. <https://www.coursera.org/projects/finetuning-large-language-models-project>
20. <https://learn.deeplearning.ai/courses/langchain/lesson/u9olq/introduction>
21. <https://www.deeplearning.ai/courses/fine-tuning-and-reinforcement-learning-for-llms-intro-to-post-training/>
22. <https://www.coursera.org/projects/langchain-for-llm-application-development-project>