### **Other than the ones below, don't forget about the two LinkedIn posts.**

### **Day 1 — Learn the Basic Theory of GenAI and Machine Learning**

Let’s learn how generative AI differs from predictive AI, the business perspective on generative AI, and what LLMs are. Familiarize yourself with core concepts related to machine learning.

**Resources:**

* **Watch the videos** in the following Coursera course: *Generative AI for Everyone | Coursera***Link:**<https://www.coursera.org/learn/generative-ai-for-everyone>
* **Take this course** from AWS Skill Builder: *Machine Learning Terminology and Process***Link:**<https://explore.skillbuilder.aws/learn/course/260/play/800/machine-learning-terminology-and-process;lp=28>

### **Day 2 — Learn the Basic Theory of LLMs**

Learn about LLMs, the basics of transformer architecture, LLM pre-training, the inference/decoding process, and the parameters of LLM decoding.

**Resources:**

* **Get an understanding of neural networks** by watching these intuitive videos.  
  **Link:** https://www.youtube.com/watch?v=aircAruvnKk&list=PLZHQObOWTQDNU6R1\_67000Dx\_ZCJB-3pi&index=2
* **Watch all the videos** in Week 1 of the following Coursera course: *Generative AI with Large Language Models | Coursera***Link:**<https://www.coursera.org/learn/generative-ai-with-llms>
* **Get an introduction to HuggingFace** by watching this short video.  
  **Link:**<https://www.youtube.com/watch?v=QEaBAZQCtwE>

### **Day 3: LLM Fine-TuDning, Instruction Tuning, Benchmarks, PEFT Techniques**

**Resources:**

* **Watch all the videos** in Week 2 of the following Coursera course: *Generative AI with Large Language Models | Coursera*
* **Complete this short course** on deeplearning.ai: *DLAI — Finetuning Large Language Models***Link:**<https://learn.deeplearning.ai/courses/finetuning-large-language-models/lesson/ep67b/introduction>

**Hands-on Assignment:**Run the notebook from the above deeplearning.ai on your own and play around with the parameters. Try to run it locally with a different dataset that you explore from HuggingFace.  
(Hugging Face — The AI community building the future.)  
**Link:**<https://huggingface.co/datasets>

### **Day 4–5: Reinforcement Learning Through Human Feedback and AI Feedback**

**Resources:**

* **Watch all the videos** in Week 3 of the following Coursera course: *Generative AI with Large Language Models | Coursera*
* **Complete the following short course**: *DLAI — Reinforcement Learning From Human Feedback***Link:** [https://learn.deeplearning.ai/courses/reinforcement-learning-from-human-feedback/lesson/k1m9r/introuction](https://learn.deeplearning.ai/courses/reinforcement-learning-from-human-feedback/lesson/k1m9r/introduction)

**Assignment:**

* **Objective:** Fine-tune a pre-trained LLM using a custom dataset to improve its performance on a specific task. It is not recommended to use tutorials from HuggingFace directly.
* **Note:** You can use Google Colab if you require more resources.

**Steps:**

1. Select a suitable pre-trained model from HuggingFace.
2. Choose a dataset relevant to a particular domain (e.g., medical, legal, customer support) from HuggingFace’s dataset repository or create your own dataset.
3. Use the *transformers* library from HuggingFace to fine-tune the selected model on your dataset.
4. Optionally, experiment with different hyperparameters (e.g., learning rate, batch size) and document their impact on the model’s performance.
5. Evaluate the performance of the LLM before and after fine-tuning.
6. Document your fine-tuning process, challenges faced, and key observations in a one-page report.

### **Side Hustle**

Generate and demo an AWS PartyRock application.  
**Link:**<https://partyrock.aws/>