

# Fine-tuning LLAMA 2 To Help Flesh Out Quality Storywriting

**"Unsung" Audience: Writers Struggling with Writer's Block / Learning Disabilities**

–Goal: generate more individualized stories than can be generated by any LLM, adopting stylistic choices from author of choice.

## **Related Class Topics:**

Chiara Coetzee, "Generating a full-length work of fiction with GPT-4Links to an external site.," Medium

Nina Beguš, "Experimental Narratives: A Comparison of Human Crowdsourced Storytelling and AI Storytelling".



# Process

## 01 – Create Sample Data

Curated based on the author style mimicked.

## 04 – Repeat

Repeat this process for other author styles you want to mimic.

## 02 – Create Prompt

Create the prompt that you want to be produced.

### Successes

- Simplistic Process
- Flexibility
- Creative Freedom

## 03 – Gradient.ai Implementation

Utilize Google Colab code to run the fine-tuning.

### Limitations

- Token count
- Extreme detail of literary elements

```

!pip install gradientai --upgrade

import os
os.environ['GRADIENT_ACCESS_TOKEN'] = "Cj5VQNurIMif7ah787Nurrh1eC7giM59"
os.environ['GRADIENT_WORKSPACE_ID'] = "5d7079c4-d3d7-48b8-ae72-eb0c0b4f2170_workspace"

from gradientai import Gradient

def initialize_model(gradient, base_model_slug="llama2-7b-chat", model_name="Writers/Story Test Model"):
    base_model = gradient.get_base_model(base_model_slug=base_model_slug)
    new_model_adapter = base_model.create_model_adapter(name=model_name)

    print(f"Created model adapter with id {new_model_adapter.id}")
    sample_query = "### Instruction: I need a plot idea for a murder mystery story set in a distant rural town. \n\n### Response:"
    print(f"Asking: {sample_query}")

    completion = new_model_adapter.complete(query=sample_query, max_generated_token_count=500).generated_output
    print(f"Generated (before fine-tune): {completion}")
    return new_model_adapter

def fine_tune_model(model_adapter, samples, num_epochs=3):
    for epoch in range(num_epochs):
        print(f"Fine-tuning the model, iteration {epoch + 1}")
        model_adapter.fine_tune(samples=samples)

def generate_output(model_adapter, query, max_tokens=500):
    completion = model_adapter.complete(query=query, max_generated_token_count=max_tokens).generated_output
    print(f"Generated (after fine-tuning): {completion}")

def main():
    with Gradient() as gradient:
        model_adapter = initialize_model(gradient)
        samples = load_samples() # Assume this function loads samples from an external source

        # Fine-tuning
        fine_tune_model(model_adapter, samples)

        # Generating output before and after fine-tuning
        sample_query = "### Instruction: I need to write a murder mystery set in a city where a detective investigates a string of seemingly accidental deaths within an influential social circle. As the detective digs deeper, uncover hidden secrets, betrayals, and agendas that link the victims to the city's elite, leading to a suspenseful revelation of the truth. \n\n### Response:"
        generate_output(model_adapter, sample_query)

    model_adapter.delete()

```

Code using Google Colab and gradient.ai:

1st Step – Installation, 2nd Step – Import operations system (various environmental variables), 3rd Step – Commence with code! Pre-finetuned and post-finetuned responses are created.



```

def load_samples():
    samples = [
        {
            "inputs": "### Instruction: Write a story about ten strangers lured to a remote island, systematically murdered one by one, leading to a thrilling investigation into their dark secrets and the killer's identity. \n\r",
        },
        {
            "inputs": "### Instruction: Develop a story revolving around a murder mystery on a train, where the detective Hercule Poirot investigates the complex web of passengers' secrets to solve the case. \n\n### Response: T",
        },
        {
            "inputs": "### Instruction: Craft a narrative about a detective unraveling a complex murder mystery in a small village, where everyone seems to have secrets. \n\n### Response: Title: 'The Murder Of Roger Ackroyd' \n\r",
        },
        {
            "inputs": "### Instruction: Write a story set on a river cruise in Egypt, where a series of murders occur, and a detective must sift through complex relationships to find the killer. \n\n### Response: Title: 'Death (",
        },
        {
            "inputs": "### Instruction: Compose a tale where a detective re-investigates a historic murder case, relying on the testimonies and memories of five witnesses to uncover the truth. \n\n### Response: Title: 'Five Litt",
        },
        {
            "inputs": "### Instruction: Create a story about a series of murders following a sequence and the race to stop the killer before they complete their deadly alphabetical agenda. \n\n### Response: Title: 'The A.B.C. Mu",
        },
        {
            "inputs": "### Instruction: Devise a story where an aging detective solves his final case, facing a unique killer whose method involves manipulating others to commit murder. \n\n### Response: Title: 'Curtain: Poirot'",
        },
        {
            "inputs": "### Instruction: Weave a story set in a holiday resort, where the murder of a glamorous guest leads to an investigation that uncovers deep-seated jealousy and deceit. \n\n### Response: Title: 'Evil Under 1",
        },
        {
            "inputs": "### Instruction: Frame a narrative around a murder announced in a local newspaper, leading to a gathering where the murder actually occurs, and the subsequent investigation. \n\n### Response: Title: 'A Mur",
        },
        {
            "inputs": "### Instruction: Formulate a story where a seemingly perfect love story gradually reveals sinister undertones, culminating in tragedy and betrayal. \n\n### Response: Title: 'Endless Night' \n\nSetting: A c",
        }
    ]

    return samples

```

Sample data: 10 inputs, each approx. 400–500 tokens. Adapted from Agatha Christie's novels, weaving in important characteristics from her work.

Total Sample Data for all authors: 50 inputs, with 5 various famed authors with unique storytelling.

Asking: ### Instruction: I need a plot idea for a murder mystery story set in a distant rural town.

### Response:

Generated (before fine-tune): Sure, I'd be happy to help you come up with a plot idea for a murder mystery story set in a distant rural town. Here's an idea:

Title: The Shadow in the Woods

Setting: A small, rural town nestled in the heart of a dense forest. The town is home to a few hundred residents, most of whom are farmers, loggers, or hunters. The town is isolated, with the only way in or out being a winding road.

Plot Idea:

A body is found in the woods, near the edge of town. The victim is a young woman, and she's been brutally murdered. The local sheriff, a grizzled old man named Jack, is stumped. He's been investigating crimes in this small town for years.

As the investigation unfolds, Jack discovers that the victim was not who she seemed to be. She was, in fact, a stranger who had arrived in town just a few days before her death. The only clue is a small, intricately carved wooden box.

As Jack delves deeper into the case, he realizes that the murder is connected to a larger conspiracy involving the town's residents. It seems that the victim was not the only stranger to have arrived in town recently. There's a pattern.

Jack must navigate the complex web of relationships and secrets among the town's residents to uncover the truth behind the murder. He must also confront his own demons, as the investigation brings up painful memories from his past.

As the story unfolds, Jack discovers that the murder is connected to an ancient cult that has been operating in secret in the town for generations. The cult is obsessed with gaining immortality, and they will stop at nothing to achieve their goal.

As

Fine-tuning the model, iteration 1

Fine-tuning the model, iteration 2

Fine-tuning the model, iteration 3

Generated (after fine-tuning): Title: The City's Secret.

Setting: A fictional city, where the elite social circle holds sway.

Characters:

- Detective Jameson: A seasoned investigator with a sharp mind and a knack for piecing together seemingly unrelated events.
- Lady Victoria: A charming socialite with a hidden agenda.
- Lord Edgar: A wealthy businessman with a dark past.
- Dr. Eliza: A brilliant scientist with a mysterious connection to the victims.
- Inspector Hastings: Jameson's loyal partner.

Plot Summary:

- The story begins with the death of Lady Victoria's husband, followed by a series of seemingly accidental deaths among the city's elite.
- Jameson investigates, uncovering a complex web of secrets and motives.
- As he delves deeper, he discovers a sinister plot involving Lady Victoria, Lord Edgar, and Dr. Eliza.
- The trio had been manipulating the victims, using them as pawns in a larger scheme.
- The investigation leads to a dramatic confrontation, where Jameson exposes the truth and brings the perpetrators to justice.

Themes:

- The story explores the themes of power, manipulation, and the lengths people will go to maintain their position in society.
- It also highlights the detective's keen mind and his ability to unravel complex mysteries.

Genre: Murder Mystery.

Target Audience: Fans of classic murder mysteries, particularly those by Agatha Christie.

Word Count: 70,000 words.

Pitch: In this gripping murder mystery, Detective Jameson uncovers a sinister plot involving the city's elite, leading to a thrilling revelation of the truth. With its intricate plot and complex characters, The City's Secret is a must-read for fans of the genre.

Fine-tuning results. We can see various differences.

# Further Exploration

## Relationship between sample data instructions / prompt instructions

Can different types of prompts that may not necessarily be covered by sample data be affected by fine tuning? And how much specifically? These questions are great to tackle further with more trial and error.

## Copyright // Diminished Creative Potential

The concept of copyright has been touched upon in class, and especially when the dataset is comprised of copyrighted material, it poses questions to us about the limitations of our use cases. Similarly, the issue with LLM-dependent content makes us question whether creativity is starting to wane among the writing scene.