

1. Generate and Prepare dataset

✓ Option 1: ISO Format Dataset

Name: *Grahnumb_Task2\ISO_Format_Dataset.jsonl*

```
{
  "instruction": "Extract exact datetime from this expression assuming
today is 2025-08-04.",
  "input": "show it on 26th April at 10",
  "output": {
    "start": "2025-04-26T10:00:00+05:30",
    "end": null
  }
},
```

✓ Option 2: Verbose Structured Output

Name: *Grahnumb_Task2\Verbose_Structured_Output.json*

```
{
  "instruction": "Extract temporal information and return JSON with
exact datetime.",
  "input": "yesterday at 14:30",
  "output": {
    "type": "single_time",
    "date": "2025-08-03",
    "time": "14:30",
    "approximate": false
  }
},
```

Final: Use **Option 1** for your current LLaMA finetuning task — it's more compact and generalizable.

Format	Description	Best Use Case
.json	Standard JSON file with entire dataset as a list	Human-readable, small datasets
.jsonl	JSON Lines: 1 JSON object per line	Streaming, large datasets, LLMs

2. Selection Model

I need to use LLaMA 3.2, but it's a gated repository and requires 24 hours to get access. So, I'm exploring other options like:

Resource	Best Choice
Kaggle Notebook (T4 GPU, 16GB RAM)	microsoft/phi-2 or TinyLlama
Instruction Fine-Tuning	Nous Hermes 2 or Mistral-7B
Quick Experiments	TinyLlama or Gemma-2B
Accurate JSON Generation	Mistral-7B (best token consistency)

Final: I try with **Mistral 7b** and **Llama2 7b**

3. Framework for Finetuning

Tool	Best For	Code Complexity
Axolotl	Quick YAML-based LoRA tuning	Low
HuggingFace PEFT	+ Full control & production setup	Medium
QLoRA + TRL	Huge datasets + memory efficiency	High
LLaMA-Factory	Large-scale, OpenChat-style models	Medium
FastChat	Building ChatBots / APIs	High

Final: I used Hugging face + PEFT

4. Steps for Finetuning

1. Load Model and Tokenizer
2. Padding Token Fix (often needed for Mistral)
3. Dataset Formatting
4. Tokenization
5. LoRA Configuration
6. Apply LoRA to Model
7. Define Training Arguments
8. Trainer Setup

9. Start Training

10. Save Model

Upload to Hugging Face:

<https://huggingface.co/tusharoclock/finetunellm>