Final Project

LLM Council Refactoring & Local Deployment

The LLM Council by Andrej Karpathy is a system where multiple LLMs independently answer a user query, anonymously review and rank each other's responses, and then a designated "Chairman" LLM synthesizes their outputs into a single final answer.

[1][Andrej karpathy "LLM Council" November 23, 2025]

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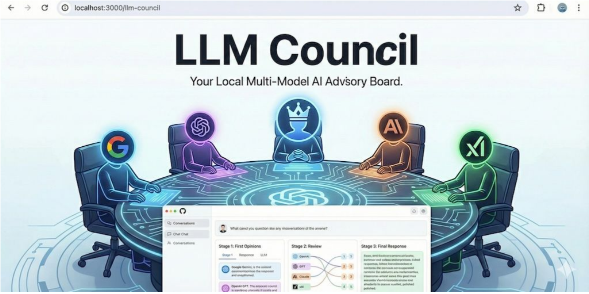
What is the LLM Council?

- Multiple LLMs answer the same user query
- Models review and rank each other’s answers anonymously
- A **Chairman LLM** synthesizes the final combined response
- Originally uses **OpenRouter** to access multiple models



[1][Andrej karpathy “LLM Council” November 23, 2025]

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Council Workflow

- **Stage 1 – First Opinions**
  - Each LLM answers the question independently
  - Responses shown in a tabbed interface
- **Stage 2 – Review**
  - Each LLM ranks the other models’ answers
  - Anonymized identities prevent bias
- **Stage 3 – Chairman Final Answer**
  - Chairman LLM aggregates all answers
  - Produces the final result

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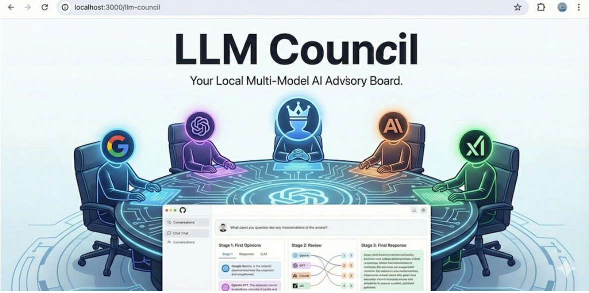
Project Goal

The goal is to refactor the project so that the different LLMs in the “LLM Council” run locally on your own machines, using Ollama instead of OpenRouter/OpenAI.



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LLM Council

Your Local Multi-Model AI Advśory Board.

- Replace external LLM provider calls (**OpenRouter**) → with **local LLMs running via Ollama**
- Build a **distributed multi-LLM system** (LLM Council)
- Demonstrate a **working end-to-end prototype** in class

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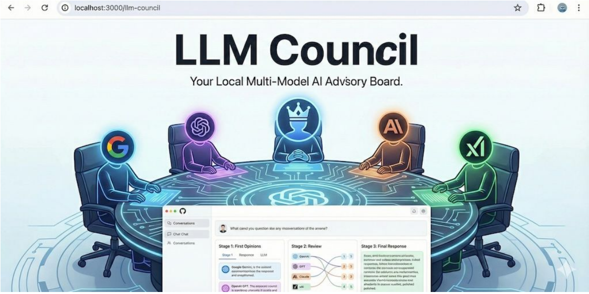
Team Requirements

- Groups of **maximum 5 students**
- Clone the GitHub repo by **Andrej Karpathy**
- Work collaboratively on refactoring and deployment
- Final evaluation will occur **during the last TD session**



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Mandatory Requirements

- Replace **OpenRouter** with **Ollama** for all LLM calls
- Each team member must run **at least one model**
- Models may run:
  - on separate machines, or
  - on the same PC if resources allow
- Machines must communicate via **Ollama REST API**
- Chairman LLM must run on a **separate instance** (ideally separate machine)

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Evaluation Criteria

- **Code quality** (refactoring, modularization, clean logic)
- **Functionality** (fully working council & chairman workflow)
- **Improvements** added to the original repo
- **Documentation** (README, setup guide, architecture, report)
- **Teamwork & clarity** during live demo

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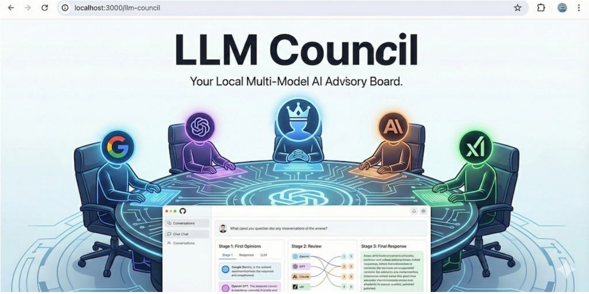
Final Notes

- Deadline will be announced later on **Moodle**
- Final demo will take place **in class**
- Make sure all machines are tested and connected before evaluation



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Enhancement Ideas

- Backend Enhancement
  - Add Model Health & Status Checks
    - Automatic ping/heartbeat for each remote Ollama endpoint.
    - Display model load time, speed, availability.
  - API Rate & Token Cost Tracking
    - Even with local LLMs, track tokens in/out estimated, cost for cloud models
- Frontend Enhancement Ideas
  - Tab view can be improved with:
    - color-coded model responses
    - collapsible/expandable panels
    - side-by-side comparison mode
    - “diff view” highlighting differences between outputs
  - Model Performance Dashboard: latency per model, token throughput, consistency score, ranking results, etc
  - Dark Mode / Light Mode Simple UI enhancement but improves usability.

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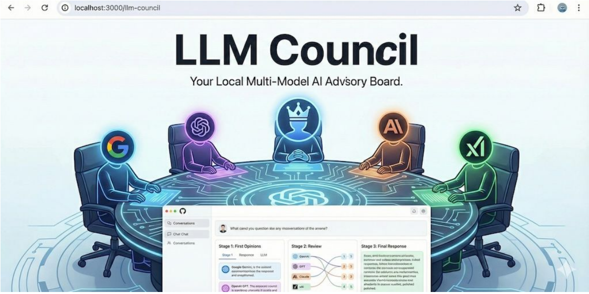
Ambitious Enhancements

- Drag-and-Drop Council Builder
  - Drag LLM icons into a “council room” UI
  - Assign Chairman role visually
- Plugins or Tool Use
  - Enable the council to call tools (calculator, web search, code executor)



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