Assignment – AI Agent Prototype

Core Features (Mandatory)

- Select **one manual task** from your daily life or university work, and build an AI agent that can **reason, plan, and execute** to automate it.
- The AI agent must use **at least one fine-tuned model**. You should:
  - Build a fine-tuned or parameter-efficient tuned model (e.g., LoRA).
  - Integrate it into your agent.
  - Clearly explain **why you chose this fine-tuning target** (e.g., task specialization, improved reliability, adapted style).
- Design and implement **evaluation metrics** to measure the quality or reliability of your agent's outputs.

Optional Features (Bonus Points)

- **Multi-agent collaboration** (e.g., Planner + Executor).
- **External integrations** such as **RAG (Retrieval-Augmented Generation), MCP (Model Context Protocol), or custom Tools**.
- **User interface** (any format: chat UI, website, mobile app, desktop app, CLI).

Notes

- ✅ **You are allowed (and encouraged) to use LLMs during development** (e.g., for code generation). Just make sure to submit the **interaction logs**.

Deliverables

- **Source code of the prototype**.
- **AI agent architecture document** (components, interaction flow, models used, and reasons for your choices).
- **Data science report** covering:
  - Fine-tuning setup (data, method, and results).
  - Evaluation methodology and outcomes (quantitative and/or qualitative).
- **Interaction logs**: the **prompts used** and the **chat history with the AI**.
- (Optional) **Demo video or screenshots**.

Submission Details

Please push all “Deliverables” to your GitHub repository.

NOTE

-Please describe your name, university, department in the README. This is to associate your repository with your intern application.

-Please notify it by **sending email to the following addresses**. Please contain the url of the repository.

yasuhironose@imbesideyou.world

sanskarnanegaonkar@imbesideyou.world

mamindla@imbesideyou.world

Animeshmishra@imbesideyou.world

Reference

- AI Agent Design Pattern
  - https://www.anthropic.com/engineering/building-effective-agents
  - https://arxiv.org/pdf/2405.10467