Project-based learning in 2025

Information

- Time: 2:45pm-4:15pm, Monday
- Place: Room 122
- Topic: LLM

2025/06/24

- Task 1: Set up a local LLM environment (e.g., ollama run deepseek-r1:14b) and use API to access it.
- Task 2: You are a reviewer of a scholarship for oversea activities and you must grade a lot of applications from 0 (worst) to 100 (best). Do it with the local LLM environment with the default criteria.
- Task 3: Use a machine learning method (e.g., SVM) to predict the final grade from 0 to 3 (real number).

2025/04/14

- Members: Yuxin (lecturer), Haiyan, Likun, Chen-Meng, liangz
- Memo: learning process (web interface → API → localization), how to use ChatGPT API
- Reading: ChatGPT API
- Practice: Finish the following task before the next seminar (April 21)

Task

You are a staff with the admission office of K University. You want to compare the research plan of an application with the research introduction of some lab to see how much the application matches the study of the lab. Please use ChatGPT web interface & API to give an evaluation score (from 0 to 100) of the matching degree with a concise explanation.

Research Plan: The goal of my research proposal is to advance drug discovery by developing machine learning models and algorithms for graphs. The emphasis will be on incorporating explainability into the models developed to provide insights into the decision-making processes in drug discovery. The is to facilitate the identification of potential drug candidates with a deeper understanding of the underlying molecular interactions with the latest graph neural network (GNN) based machine learning algorithms.

Research introduction of the lab: This lab primarily researches combinatorial or discrete optimization, a fundamental area in computer science. With recent advancements in computer and algorithm theory, this field is expanding, with applications in operations research, systems engineering, bioinformatics, management, economics, and social sciences. The group focuses on studying the mathematical properties of problems from a discrete mathematics perspective and develops algorithms to solve practical issues. Current research projects include theoretical studies on graph and network problems, developing practical algorithms for packing problems, and researching

algorithms for chemical graph estimation. **Keywords:** Combinatorial Optimization, Discrete Mathematics, Algorithm Development, Operations Research, Graph Theory