

# LLM-Based Knowledge Graph Construction and Manipulation for Education

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## Company Background

Hi Labs Inc. is at the forefront of educational innovation as an AI-centric enterprise. Our ambition is to revolutionize the educational landscape by providing a state-of-the-art platform tailored for educators. Through this platform, teachers, professors, and other educational professionals can effortlessly design and customize virtual teaching assistants to cater to their unique needs.

Our mission extends beyond technological advancement. We aspire to leverage the power of AI to foster trusted communities that bridge students, educators, and AI-enabled educational institutions. By weaving artificial intelligence into the very fabric of learning, we aim to empower schools, universities, and educational institutes to transcend traditional barriers. Through collaboration, creativity, and cutting-edge technology, Hi Labs Inc. is committed to shaping a future where education is accessible, personalized, and inspiring.

## Project description

Knowledge graphs map relationships between entities, creating a network of interconnected information. This structure aids in understanding complex relationships and inferring insights, making it valuable for data integration, semantic search, and more. Large language models are AI systems skilled in understanding and generating text. They can construct and manipulate knowledge graphs by extracting entities and relationships from unstructured data, enabling a new level of information retrieval and management.

In the realm of education, knowledge graphs create personalized learning pathways by linking concepts in a coherent manner. Coupled with large language models, they enable AI-driven tutoring systems that can dynamically adapt to individual student needs. This integration fosters personalized and efficient learning experiences, heralding an innovative era in educational technology.

In this project, students will engineer a system that leverages the capabilities of large language models to autonomously construct and manipulate knowledge graphs. By seamlessly integrating this advanced technology into our platform, we aim to enhance the educational experience for our student users, unlocking personalized learning pathways and fostering a richer understanding of complex subjects.

## Preferred skills

- JavaScript/TypeScript and Python
- NextJS
- Graph analytics
- Large language models

## Preferred team size

We are looking for 4 students to work on the project.

## Work location

Remote

## Non-disclosure agreement (NDA)

Students need to sign a simple NDA.

## Ownership of work

All work done during the project will be the property of Hi Labs Inc.