Blended Learning Student PBL Evaluation Report

Printed on: August 28th, 2024

Student Name: Nengxin Mou

Summary

PBL Subject	PBL Track	Project Total Hours	Status
Real-World Applications of ML, NLP & LLM - OpenAI Project	Financial News Sentiment Analysis	24	Completed

PBL Description

The Real-World Applications of ML, NLP & LLM - OpenAI Project delves into the crucial intersection of machine learning, natural language processing (NLP), and large language models in today's rapidly evolving tech landscape. This project assesses the significant impact of this convergence by exploring both its capabilities and practical applications. Recent advancements in AI, fueled by extensive data and increased computational power, make this exploration especially timely. Machine learning algorithms, particularly those employing deep neural networks, have made significant strides in language understanding and generation. NLP is now extensively used in areas such as sentiment analysis, translation, content creation, and conversational agents.

Large language models like GPT have redefined the field, demonstrating unmatched language comprehension and generation abilities. Trained on vast text datasets, these models excel in tasks ranging from summarization to creative writing. This project highlights the convergence of machine learning, NLP, and large language models, underscoring their importance and potential to create a positive societal impact.

In the Financial News Sentiment Analysis track, students delve into the analysis of financial news, utilizing advanced machine learning and natural language processing (NLP) techniques. They explore the critical role that sentiment plays in financial news, helping to inform investment decisions and manage risk effectively. Students will also learn how to enhance the accuracy of sentiment analysis by fine-tuning large language models like GPT and LLaMA on extensive textual datasets. Through this experience, they will gain practical skills that are not only applicable in the financial sector but also contribute to broader advancements in machine learning and NLP.

Program Management
245 Main Street, Cambridge, MA, United States 02142
programs@touchedu.io

Blended Learning Student PBL Evaluation Report

Printed on: August 28th, 2024

Student Name: Nengxin Mou

Recommendation

Dear Colleagues,

My name is Mika Wang, and I am a Data Scientist at a hedge fund and was a researcher at UNC Chapel Hill. I specialize in analyzing both structured and unstructured data, with a particular focus on advancing healthcare data science. My research involves developing new algorithms, conducting experiments, and creating prototypes, with my work published in leading journals and conferences such as JAMIA, ACM, ASIS&T, and MLHC. I also hold patents with industrial applications and earned my Ph.D. in Health Informatics. In my current role as a Data Scientist in the finance sector, I apply my extensive expertise to new challenges.

During the TechXcelerate Summer 2024 Program, I had the opportunity to work with Nengxin Mou as his project lead for the Real-World Applications of Machine Learning, Natural Language Processing, and Large Language Models - OpenAI Project. In this program, students will gain hands-on experience with advanced AI techniques. The curriculum includes utilizing machine learning for algorithmic trading models and fine-tuning large language models to enhance NLP (Natural Language Processing) tasks. Students will learn to apply NLP techniques, extract and summarize text using GPT models, and improve their information extraction and data processing skills. Through these activities, students will develop a comprehensive skill set crucial for effectively deploying cutting-edge AI technologies.

Working with Nengxin throughout the program has been a pleasure. His growth and development were evident across various settings, including seminars, discussions, and project-based learning sessions. Nengxin demonstrated engagement and receptiveness, showcasing impressive academic skills and a strong dedication to his work.

Nengxin and his team delivered an outstanding performance with their project on “Optimizing Model Performance for Financial News Sentiment Analysis.” The team exhibited remarkable depth in their research, gaining profound insights into Large Language Models (LLMs) and their practical applications. They maintained a clear focus throughout the project, producing content that was both compelling and thoroughly justified by their background and motivation. Their integration of experiments and research questions was executed, enhancing the overall impact and coherence of their work. The team’s attention to detail in formatting and the use of distinctive colors added a polished, professional touch to their presentation, further reflecting their dedication and expertise.

Program Management
245 Main Street, Cambridge, MA, United States 02142
programs@touchedu.io

Nengxin's presentation skills were impressive. He effectively covered the introduction and background, research question, and experiments overview with clarity and confidence. His use of eye contact and engaging delivery style significantly enhanced the presentation's impact. Additionally, Nengxin's collaboration with his team demonstrated a strong work ethic and a deep commitment to the group's success. His ability to work harmoniously with team members and his dedication to the project contributed to the cohesion and success of the group's efforts.

I am confident that Nengxin will continue to leverage the skills and experiences gained from the program as he advances in his studies. His passion for machine learning and natural language processing is evident, and I believe he will excel in his future endeavors.

Should you need any additional information regarding Nengxin's work in the program, please feel free to contact me or the PBL team at programs@touchedu.io.

Thank you for your time and consideration.

Project Lead Signature:

Signed by:
Mika Wang
D0BE0ECE9D614B4...

Name: Mika Wang
Title: Data Scientist at Hedge Fund | Researcher at UNC Chapel Hill
Date: 9/6/2024

Academic Team Signature:

Signed by:
Cecilia Fan
44B344704ECE430...

Name: Cecilia (Wenjie) Fan
Title: Academic Coordinator
Date: 9/5/2024