

Project Documentation

Name: Divya Jangid | Email: jangid.d@northeastern.edu | NUID: 001099745

Project Name: Case Study on Revolutionizing Medical Diagnosis with Prompt Engineering and AI

Summary:

This study aims to explore the transformative potential of integrating prompt engineering and artificial intelligence (AI) in the field of medical diagnosis. Through a comprehensive review of existing research literature such as PubMed, analysis of case studies, and examination of real-world implementations, this study will delve into specific examples such as the use of AI for early detection of cancer and the application of prompt engineering principles in improving diagnostic accuracy, AI-powered patient care by using AI virtual healthcare assistance, AI mental health support and AI in patient education and cost optimization. With a focus on interdisciplinary collaboration, enhanced patient care, and the harnessing of advanced technologies, this study seeks to shed light on how these innovative approaches can revolutionize diagnostic practices. Furthermore, the case study addresses critical challenges such as patient data privacy, transparency, and accountability with help of comparative study on Chat-GPT. Thus, this case study endeavors to explore the transformative potential of prompt engineering and AI in addressing these challenges while revolutionizing medical diagnosis for the betterment of healthcare delivery and patient care.

Project Period:

13th February 2024 – 1st April 2024

Repository and Documentation:

1. [GitHub Repository](#)
2. [Case Study Documentation](#)
3. [Insights on Case Study Slide Deck](#)
4. [Project Dashboard](#)

Project Overview:

This project is designed to provide students with an extra study tool, helping them grasp the significance of prompt engineering and its role in enhancing the effectiveness of AI systems. It serves as a resource for students to explore intriguing facts and ongoing research in the realm of medical diagnosis utilizing AI, showcasing how prompt engineering contributes to the efficiency of these systems.

Through real-world examples conducted on Chat-GPT, the project illustrates the impact of applying prompt engineering techniques versus not applying them. By comparing responses with and without prompt engineering, students gain insights into how the choice of prompt pattern influences the AI's performance and output.

Moreover, the project aims to deepen students' understanding of the complexities involved in developing AI solutions for medical diagnosis. It highlights the importance of thoughtful prompt design in ensuring accurate, reliable, and ethically sound AI-driven healthcare tools.

By engaging with this project, students not only learn about the latest advancements in AI-based medical diagnosis but also gain valuable insights into the practical considerations and challenges of implementing AI in real-world contexts. Through exploration and analysis, they develop critical thinking skills and a deeper appreciation for the interdisciplinary nature of AI development in healthcare.

Project Documentation

Name: Divya Jangid | Email: jangid.d@northeastern.edu | NUID: 001099745

Conclusion:

In conclusion, the Case Study on Revolutionizing Medical Diagnosis with Prompt Engineering and AI represents a significant step towards understanding the transformative potential of integrating prompt engineering and artificial intelligence (AI) in healthcare. By delving into interdisciplinary collaboration and real-world implementations, this study has provided invaluable insights into the innovative approaches reshaping diagnostic practices.

Throughout the project period, we have explored intriguing facts, analyzed case studies, and engaged in comparative studies to highlight the impact of prompt engineering on AI-driven medical diagnosis. From early cancer detection to AI-powered patient care, the study has underscored the profound implications of harnessing advanced technologies for enhancing patient outcomes and healthcare delivery.

Furthermore, by addressing critical challenges such as patient data privacy and transparency, the project has demonstrated a commitment to ethical and responsible AI development. Through meticulous documentation and insightful analysis, we have laid the groundwork for future advancements in AI-driven healthcare solutions.

Moving forward, the repository, documentation, and project insights provided will serve as valuable resources for further research and exploration in this dynamic field. As we continue to navigate the complexities of AI in healthcare, the lessons learned from this case study will inform future endeavors, fostering innovation, collaboration, and ultimately, the betterment of patient care.

Request for offer extension:

Based on the completion of the Case Study on Revolutionizing Medical Diagnosis with Prompt Engineering and AI, I am seeking an extension on my offer letter for the OPT volunteering work.

This project, undertaken from February 13th to April 1st, 2024, has been a significant endeavor aimed at exploring the transformative potential of integrating prompt engineering and artificial intelligence (AI) in the field of medical diagnosis.

Throughout the project, I have diligently reviewed existing research literature, analyzed case studies, and examined real-world implementations to delve into specific examples of AI's role in healthcare. From early cancer detection to AI-powered patient care, this study has provided invaluable insights into the innovative approaches reshaping diagnostic practices.

Moreover, by addressing critical challenges such as patient data privacy and transparency, I have demonstrated a commitment to ethical and responsible AI development. The meticulous documentation and insightful analysis produced during this project will serve as a valuable resource for further research and exploration in this dynamic field.

Furthermore, I conducted successful research on the behavior of Chat-GPT when prompt engineering is applied versus when it is not applied. This comparative study sheds light on the significant impact of prompt engineering on AI-driven medical diagnosis, highlighting the importance of thoughtful prompt design in ensuring accurate and reliable AI-driven healthcare tools.

As this project serves as an important study resource for students seeking to understand the significance of prompt engineering and its impact on AI systems, I believe that extending the offer period will allow me to continue contributing to this valuable research endeavor. I am eager to further analyze the insights gained and share them with the academic community to foster innovation, collaboration, and ultimately, the betterment of patient care.