

Our project, **Esai**, was developed for the Best Open Data Hack award, which required us to utilize publicly accessible datasets related to UC Davis to address questions of interest to the campus community. Our overarching goal was to create a data-driven solution to assist individuals facing mental health issues at UC Davis and beyond. With backgrounds in psychology, data science, computer science, and engineering, our interdisciplinary team aimed to harness the power of data to provide reliable and accessible mental health resources.

To achieve this, we focused on two key datasets. The first dataset was an HTML-scraped version of the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), a comprehensive resource that serves as the standard for mental health diagnoses. We fine-tuned our GPT model chatbot using vector embeddings of the DSM-5 dataset to respond effectively to mental health-related queries.

The second dataset we incorporated was the Youth Mental Health dataset, which included information such as fiscal year, population type, and the utilization of mental health services by children and youth. This dataset enabled us to gain insights into service utilization patterns.

Our methodology involved leveraging OpenAI's embedding engines and GPT-3.5 Turbo, to process and analyze text data from both the DSM-5 and the Youth Mental Health dataset. We utilized Pinecone for efficient vector embedding configuration, LangChain for language processing, and Next.js for the development of our platform. These technologies allowed us to perform semantic searches, match user queries with relevant mental disorders, and provide corresponding reference material from the DSM-5.

Our accomplishments include mastering the use of Pinecone, LangChain, and the OpenAI API. We also built a complex algorithm for scraping the DSM-5 from an HTML version accessible through the UC Davis library VPN. These achievements demonstrate our dedication to utilizing cutting-edge technologies and innovative approaches to address mental health challenges.

Moving forward, we plan to improve the user interface of **Esai**, particularly for enterprise applications, to enhance the user experience and cater to the needs of professionals. We aim to refine our data visualization techniques and provide interactive and insightful representations of the mental health landscape at UC Davis. This will enable users to explore trends, patterns, and potential areas of improvement in mental health services and support on campus.

In conclusion, our project, **Esai**, leverages publicly accessible datasets, including the DSM-5 and the Youth Mental Health dataset, to provide reliable and data-driven mental health support. By combining our interdisciplinary expertise and innovative use of technology, we aim to positively impact the mental well-being of individuals within the UC Davis community and beyond.