HacksGiving:

Generative AI for Good

In Collaboration with AI-Club, MSOE, & Next Step Clinic

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HacksGiving Problem Statement:

In the realm of community healthcare, timely access to medical services is paramount, yet inefficiencies in the patient screening process often lead to prolonged waiting times for appointments, and a lack of patient education regarding their health. Our non-profit partner is seeking innovative AI-driven solutions that can streamline the patient screening process to enhance operational efficiency, minimize wait times, and provide educational value to patients.

Your challenge is to create an AI tool that can accurately and efficiently screen patients, categorizing them based on urgency and educational needs while ensuring privacy, inclusivity, and accessibility. This tool should aim to support healthcare staff by predicting the level of care required, offering preliminary guidance, and preparing patients for their appointments, thereby improving overall patient flow and satisfaction.

Considerations for your solution should include:

1. **Data Security:** How will your AI ensure the confidentiality and security of patient data?
2. **User Experience:** How will the interface accommodate diverse populations, including those with limited tech proficiency or disabilities?
3. **Scalability:** How can your solution be scaled to handle different patient volumes and potentially different health conditions?
4. **Educational Component:** How does your AI provide educational value, ensuring patients leave the screening more informed about their health?
5. **Integration:** How can your solution integrate seamlessly with existing healthcare IT systems?
6. **Regulatory Compliance:** How will your solution comply with healthcare regulations and ethical standards?
7. **Outcome Measurement:** What metrics will you use to measure the success and impact of your solution on reducing wait times and improving patient education?

The winning AI solution will be evaluated based on its innovation, practicality, potential impact, user-friendliness, and the extent to which it addresses the above considerations. Get ready to hack a pathway to a smarter, more efficient, and more patient-friendly healthcare system!

Project Timeline

Kickoff Event

Learn What an Effective Solution Looks Like!

- **Time: 12-1PM on Thursday, November 8th**
- **Location:** The COVE in Viets Tower
- **Virtual Option:** Click here to join the meeting
- **Overview:** Hear from Next Step Clinic, Dr. Kedziora, and the MSOE AI-Club about the problem statement, how the hackathon will be conducted, and how you can better your chances to win the grand cash prize!

Build Up Your Team!

Start Thinking About Potential Solutions With Friends!

- **Time: November 8th – November 16th**
- **Overview:** Between the kick-off meeting and the official hackathon dates, feel free to look for additional data, download LLMs onto ROSIE, and generally think about who you would like to work with! **Independent Teams are accepted**; however, we encourage you to work with a team no larger than 8 students.

Hackathon Day #1

First in-person Hackathon Day!

- **Time: 3-7PM on Friday, November 17th**
- **Location:** The COVE in Viets Tower
- **Overview:** This is the first in-person hackathon date. Teams are not required to come in-person, however, FREE DINNER will be provided and this is a chance to work in a collaborative space, use whiteboards, and get insights from other teams.

Hackathon Day #2

Final in-person Hackathon Day & PRESENTATIONS!

- **Time: 11AM-4PM on Saturday, November 18th**
- **Location:** The COVE in Viets Tower
- **Overview:** This is the final date of the hackathon! Teams should join us in-person at the Viets Tower COVE to present their solution to a panel of judges! **Teams must be in-person to present their solutions.** Not all team members need to present. Further details about the presentation rubric can be found in the project requirements section.

Project Requirements

Your Team

While not required, we encourage you to work with a team!

- **Member Count:** 1-8 people per group
- **Sign-up Deadline:** There is no deadline for sign-ups. As long as you present on November 18th, your solution will be considered.
- **Team Composition:** Some teams may be paired with one high-school student

The Solution

As outlined in the problem statement, your solution should consider the following points…

- **Consider the Following Points:**
  - **Data Security:** How will your AI ensure the confidentiality and security of patient data?
  - **User Experience:** How will the interface accommodate diverse populations, including those with limited tech proficiency or disabilities?
  - **Scalability:** How can your solution be scaled to handle different patient volumes and potentially different health conditions?
  - **Educational Component:** How does your AI provide educational value, ensuring patients leave the screening more informed about their health?
  - **Integration:** How can your solution integrate seamlessly with existing healthcare IT systems?
  - **Regulatory Compliance:** How will your solution comply with healthcare regulations and ethical standards?
  - **Outcome Measurement:** What metrics will you use to measure the success and impact of your solution on reducing wait times and improving patient education?
- **The Data Provided By Next Step Clinic**
  - **Deterministic Chat-Bot Diagram**
  - **Vetted List of ASD Providers**
  - **Scripts for Chat-Bot Interaction:** [Provided on November 17th)

The Presentation

Presentations are limited to 5 minutes per team

- **Key Understanding:** Being able to effectively explain how your solution to non-technical audiences will aid your chances of becoming an award winner.
- **Live Demo:** If you believe a live demo would aid in your explanation, you can feel free to do so. However, live demos should not exceed 3 minutes of the presentation.
- **Bonus Points:**
  - **Cost:** Next Step Clinic is a non-profit, so cost is a heavy consideration.
  - **Integration:** Well-documented, low-tech-debt code with scalable solutions.
  - **Uniqueness:** While most solutions will likely be an LLM, unique spins on this idea, or unique approaches in general are encouraged.

NOTE: You are not allowed to present projects that were built before November 8th, 2023. However, you are allowed to use open-source LLMs, external APIs, and existing packages that Next Step Clinic's dev team could reasonably use.

Hackathon Prizes!

1st Place: $3000

2nd Place: $2000

3rd Place: $1000

If You Have Any Additional Questions

- **Ben Paulson (AI-Club Coordinator): paulsonb@msoe.edu**
- **Jeremy Kedziora (Faculty Coordinator): kedziora@msoe.edu**
- **Daniel Bergen (Administration Coordinator): bergen@msoe.edu**