Smart Hospital System

Description:

This project is an AI system in a hospital that will lowering pressure on clinics.
Here is how it works:
1- The patient will provide add available data like: symptoms of the disease, X-rays, etc…
2- The system will response in 3 ways:

- If the data doesn't specify the disease, the system will ask for more information and may book an appointment in the analysis laboratory
- If the system could identify the disease, it will redirect the patient to the correct clinic and book an appointment or even may tell them what to do as treatment

Members:

1- Mohamed Ahmed Mohamed Maher (Leader)
2- Alaa Hamed Abdulghany
3- Mohamed Yahya Mohamed Elhsaneen
4- Hanaa Hemdan Alsayed Ali
5- Manar Magdy Elsayed Shehata
6- Mohamed Yasser Mohamed Abdelftah

Current roles:

- Mohamed Maher and Mohamed Yahya are working on PCOS clinic
- Mohamed Yasser and Manar Magdy are working on diabetes clinic
- Alaa Hamed and Hanaa Hemdan are working on heart clinic

Objectives:

- Reduce the pressure on clinics
- Automate appointments
- Provide accurate analysis and treatments

Tools and Technologies:

- Data manipulation and visualization libraries (numpy, pandas, seaborn, plotly, openCV)
- Machine learning and deep learning algorithms (KNN, SVM, CNN, Random Forest)
- Node js + MySQL
- Deepseek-R1

Milestones & Deadlines:

- Data preprocessing and making dashboards: **10 Oct**
- Applying ML/DL algorithms: **10 Nov**
- Applying RAG on deepseek-r1: **15 Nov**
- Backend system: **20 Nov**

KPIs:

1- Data Quality:

- 2% missing values were handled
- 97% Data accuracy after preprocessing

2- Model Performance:

- 98% F1-score
- 500 milliseconds latency
- 2% error rate

3- Deployment and Scalability:

- 99.99% API uptime
- 700 milliseconds response time per request

4- Business Impact & Practical use:

- 40% reduction of manual effort
- 20% expected cost savings
- 80% user satisfaction