# PRE SUBMISSION REPORT

# INT-404

## AI in healthcare (Diagnosis and treatment applications)

| NAME | REG.NO | SECTION | ROLL.NO |
|---|---|---|---|
| Gopika N.R | 12100286 | K21AN | RK21ANA05 |
| Arroju Bharath | 12202256 | K21AN | RK21ANA29 |
| Ayisha Fuhada P | 12101345 | K21AN | RK21ANA53 |

# Introduction

AI refers to the use of algorithms and computer systems to perform tasks that typically require human intelligence, such as decision making, natural language processing, and image recognition.

In healthcare, AI is being used to improve the accuracy of diagnoses, predict patient outcomes, develop personalized treatment plans, and more.

For Our Project we have Chosen a Diabetic Retinopathy Image

Diagnostics: AI can help in the diagnosis of various diseases and conditions by analyzing medical images, such as X-rays, MRIs, and CT scans, and identifying patterns or anomalies that may be missed by human clinicians.

Personalized medicine: AI can help in developing personalized treatment plans for patients by analyzing their genetic and medical data and tailoring treatments to their unique needs.

Telemedicine: AI can help in the remote monitoring and management of patients, enabling healthcare providers to monitor patients' conditions and adjust treatment plans in real-time.

Improved accuracy and efficiency in diagnosis and treatment

Faster drug discovery and development

Enhanced patient outcomes and satisfaction

Reduced healthcare costs and improved resource allocation

Challenges and considerations

# DATA SETS USED

The Indian Diabetic Retinopathy Image Dataset is a collection of retinal images of diabetic patients from India. This dataset is specifically designed to aid in the development and evaluation of algorithms for the detection and classification of diabetic retinopathy, a common complication of diabetes that can lead to blindness if left untreated.

The dataset consists of a total of 1,428 retinal images, which are labeled with one of five possible grades of diabetic retinopathy severity: no diabetic retinopathy, mild diabetic retinopathy, moderate diabetic retinopathy, severe diabetic retinopathy, and proliferative diabetic retinopathy. The images were collected from patients at the Dr. Rajendra Prasad Centre for Ophthalmic Sciences in India.

**References: -**


1. Reichel, E.; Salz, D. Diabetic retinopathy screening. In *Managing Diabetic Eye Disease in Clinical Practice*; Springer: Berlin, Germany, 2015; pp. 25–38. [**Google Scholar**]
2. International Diabetes Federation (IDF). *IDF Diabetes Atlas*; IDF: Brussels, Belgium, 2017. [**Google Scholar**]
3. Bandello, F.; Parodi, M.B.; Lanzetta, P.; Loewenstein, A.; Massin, P.; Menchini, F.; Veritti, D. Diabetic macular edema. In *Macular Edema*; Karger Publishers: Basel, Switzerland, 2010; Volume 47, pp. 73–110. [**Google Scholar**]
4. Ciulla, T.A.; Amador, A.G.; Zinman, B. Diabetic retinopathy and diabetic macular edema: Pathophysiology, screening, and novel therapies. *Diabetes Care* **2003**, *26*, 2653–2664. [**Google Scholar**] [**CrossRef**] [**PubMed**]

**Website Link: -**

**https://www.mdpi.com/23065729/3/3/25#:~:text=To%20the%20best%20of%20our,annotated%20at%20a%20pixel%20level**

## Roles & Responsibilities of Team Members:-

| NAMES | RESPONSIBILITIES |
|---|---|
| Gopika N.R | • Giving insights on the research papers gathered<br>• Dataset collection |
| Arroju Bharath | • Research on topic and gathering informations<br>• Pre report submission |
| Ayisha Fuhada P | • Coding and testing<br>• Review of the code and upgrations |

## Gantt Chart