Binary Diabetic Retinopathy Model-Summary

Model Name	**Binary Diabetic Retinopathy Model**
Model Developer	**Xtend.AI**
Model Task	**Image Classification**
Model Algo	**CNN (Resnet 101)**
Model Output	**Disease Class Probability (Normal Vs DR)**
Accuracy	**0.90**
Sensitivity	**0.90**
Specificity	**0.90**
F-Score	
AU-ROC	**0.96**
Clinical Implications	**1. Model serves as a tool for early detection of Diabetic Retinopathy(DR) in clinical / primary care setting 2. Model can be used to reject non-gradable and this reduces sampling errors and frees the clinician from looking at non-gradable images 3. Model can be used to prioritize the cases at higher-risk and refer them to a clinician 4. Model performance is comparable to the performance scores or the level of competence of the clinician/specialist/user in the clinical setting**
Safety Implications	**1. Stored on secure servers. 2. Used SSL for all web access**
Efficiency	**1. Model can be used to reject non-gradable images – which typically represent 10 – 20% of the input dataset. 2. This can increase efficiency by reducing sampling errors and freeing the clinician from looking at non-gradable images**
Assumptions	**1. For DR screening, , ML model outcome would beprioritized for ' avoiding false negatives' 2. Relevant subgroups were represented in the evaluation dataset**
Caveats	**1. As the ML model is trained on data from Indian-make fundus cameras and optimized for use in Indian clinical settings , it may need to be retrained if used for a different health environment 2. Tool is intended to assist in diagnosis and not as a replacement for a clinical diagnosis**
Generalizability	**Model optimized for use in Indian clinical settings and conforms to its local laws and regulations only. This should be taken into account when applying the model elsewhere.**
Risks	**Considered but unknown**