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IIT Jodhpur proposes AI algorithm for cataract detection

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Cataracts can be detected via near-infrared eye images

Researchers from the Indian Institute of Technology (IIT) Jodhpur have proposed a multitask deep learning Artificial Intelligence (AI) algorithm for automated cataract detection. The proposed method uses eye images captured in the near-infrared domain and is computationally inexpensive, yielding high accuracy. Known as MTCD, the proposed multitask deep learning algorithm is inexpensive and results in very high levels of accuracy.

It is also cost-effective as low-cost NIR cameras are used in place of costly ophthalmoscopes. The proposed method can be used in rural settings where the availability of doctors is limited.

The research was conceptualised by Dr Mayank Vatsa and Dr Richa Singh from the mage Analysis and Biometrics (IAB) Lab at IIT Jodhpur. They were supported by various UG and Ph.D. students at the lab - Mahapara Khurshid, Yasmeena Akhter, Rohit Keshari, Pavani Tripathi, and Aditya Lakra.

IHub-Drishti, TIH at IIT Jodhpur, has recently funded the next stage of this research. The researchers plan to undertake an extensive data collection exercise for building an ophthalmology databank with different kinds of devices. The second part improves the approach and creates an explainable and robust AI algorithm for cataract detection. IIT Jodhpur has collaborated with the Postgraduate Institute of Medical Education and Research, PGIMER Chandigarh, to further expand this research.