(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :28/06/2025

(21) Application No.202511061779 A

(43) Publication Date : 11/07/2025

(54) Title of the invention : A REAL-TIME EYE-TRACKING INPUT DEVICE FOR DISABLED USER ACCESSIBILITY

(51) International classification	:G06F0003010000, G06V0040180000, G02B0027000000, B41C0001100000, G06N0003080000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention discloses a real-time eye-tracking input device (100) comprising dual NIR emitters (102), an IR-sensitive camera module (103), a gaze processing unit (104), and a universal interface (105). It facilitates digital interaction for disabled users by translating gaze direction and blink gestures into system commands. Embedded deep learning and FPGA pre-processing ensure low latency and high accuracy under varied conditions. The device is portable, power-efficient, and compatible with multiple platforms for enhanced accessibility.

No. of Pages : 14 No. of Claims : 5