(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/10/2025
(21) Application No.202511100973 A
(43) Publication Date : 05/12/2025

(54) Title of the invention : A COMPUTER-BASED MODEL FOR DETECTING EARLY STAGE ALZHEIMER'S DISEASE

(51) International classification	:G16H0050200000, G16H0050300000, G16H0015000000, G06N0005045000, G16H0030400000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(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 invention discloses a computer-based model (101) for detecting early-stage Alzheimer's disease through multimodal data integration and artificial intelligence. The system comprises a data acquisition unit (102), preprocessing engine (103), multimodal AI classifier (104), risk prediction module (105), cloud-supported data repository (106), explainable AI interface (107), and clinician reporting system (108). By combining imaging, speech, and behavioral data, the invention provides accurate, interpretable, and cost-effective diagnostic predictions. This model improves early detection, reduces diagnostic delays, and enhances clinical decision-making in healthcare environments.

No. of Pages : 14 No. of Claims : 6