

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202511044030 A

(19) INDIA

(22) Date of filing of Application :06/05/2025

(43) Publication Date : 23/05/2025

(54) Title of the invention : A NEURAL NETWORK-BASED COGNITIVE LOAD BALANCER FOR REAL-TIME HUMAN-AI INTERACTION

(51) International classification :A61P0025280000, G06N0003040000, G06N0003063000, A61B0005000000, G10L0019020000

(86) International Application No :NA
 Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
 Filing Date :NA

(62) Divisional to Application Number :NA
 Filing Date :NA

(71)Name of Applicant :
1)NOIDA INSTITUTE OF ENGINEERING & TECHNOLOGY
 Address of Applicant :19, Knowledge Park-II, Institutional Area, Greater Noida – 201306, Uttar Pradesh, India. -----
Name of Applicant : NA
Address of Applicant : NA

(72)Name of Inventor :
1)AARUSHI THUSU
 Address of Applicant :Department of Computer Science & Engineering (AIML), Noida Institute of Engineering & Technology, Greater Noida. Greater Noida -----

(57) Abstract :
 The present invention discloses a neural network-based cognitive load balancer (100) comprising a Cognitive Load Estimation Module (102), a Neural Processing Unit (104), a Response Adjustment Module (106), a Multi-Modal Output Interface (108), and a Feedback Aggregator (110). The system non-invasively monitors user behavior, predicts cognitive load levels, and dynamically adapts AI output complexity, ensuring optimal human-AI interaction efficiency and reducing cognitive fatigue across applications.

No. of Pages : 13 No. of Claims : 5