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(57) Abstract :

The present invention discloses a system (100) for providing personalized recommendations for developmental diseases using federated learning techniques. Each electronic device (101) holds user-specific data, demographics, and medical history. A centralized server (104) coordinates the training process. It distributes one or more ML models (103-1) or AI models (103-2) to each electronic device (101), receives updates based on local training, and refines a global ML or AI model (103-3). The global ML or AI model (103-3) is then sent back to each electronic device (101) for further training iterations. Ultimately, the system (100) deploys the final global model to generate personalized recommendations. The system (100) can handle non-independent and identically distributed (non-IID) data and continuously learn from newly available data using various federated learning techniques. The electronic devices (101) are associated with facilities such as hospitals, sleep research centers, or any other health care centers.

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