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(57) Abstract :

The present invention relates to an AI-based algorithm for personalized fitness recommendation systems integrating a data acquisition module (101), preprocessing unit (102), AI analytics engine (103), recommendation generator (104), feedback adaptation loop (105), and user interface module (106). The invention generates customized fitness plans by analyzing physiological, lifestyle, and medical data while dynamically adapting to real-time inputs. Through reinforcement learning and motivational features, the system ensures safety, engagement, and adherence. This invention democratizes professional-grade personalized fitness recommendations, offering scalable, efficient, and holistic solutions for global users.

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