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(57) Abstract :
The invention discloses an AI-powered device (100) for smart human activity recognition, integrating multi-modal sensors (101), preprocessing module (102), AI processor (103), classifier (104), memory unit (105), wireless interface (106), and output system (107). The device enables real-time recognition of diverse activities with high accuracy, energy efficiency, and privacy preservation. Its adaptive learning supports personalization and continuous improvement, making it suitable for healthcare, fitness, elderly monitoring, and security applications. The invention provides a compact, intelligent, and versatile wearable HAR platform.

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