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(57) Abstract :

An improved smart voice recognition device integrates a directional microphone array (101), a multi-user voice isolation module (102), and a deep learning engine (104) to accurately recognize and prioritize voice commands from different users. A noise classification unit (103) identifies and suppresses ambient sounds, while an on-device edge computing platform enhances speed and privacy. The device supports real-time user identification, command differentiation, and seamless connectivity, making it suitable for complex, noisy environments with multiple users.

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