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(51) International classification	:B64C 39/02, G06N 3/08, G06N 3/04, G05D 1/10, G05D 1/00	(71)Name of Applicant : <b>1)Chitkara University</b> Address of Applicant :Chandigarh-Patiala National Highway, Village Jhansla, Rajpura, Punjab - 140401, India. Rajpura Punjab India
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(57) Abstract :

An unmanned motile device for augmented reality (AR) enabled shopper trend visualization, comprising a Mycelium-based composite biodegradable frame 101 configured as a drone 102 for modular pod housing, a spiking neural network embedded integrated circuit as a Neuromorphic processing unit (NPU) 103 for ultra low power event driven analysis, a miniaturized 360° LiDAR 104 with eye tracking protocols for mapping gaze-based shelf attention, a thermal imaging camera 105 with AI driven emotion classifiers for affect inference, a plurality of Piezoelectric ultrasonic microphones 106 for audio analytics in crowded spaces, a perching arrangement for battery conservation, a swarm coordination module for shared localization and coverage deconfliction, a heatmap generator unit for AR-enabled 3D store visualization, a Bluetooth low energy (BLE) transmitter 110 for delivering heatmap to AR-glasses , a hybrid solar-kinetic energy arrangement , a dynamic anonymization engine for privacy-preserving metadata, and a Blockchain compliance logger for time-stamped encrypted audit records.

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