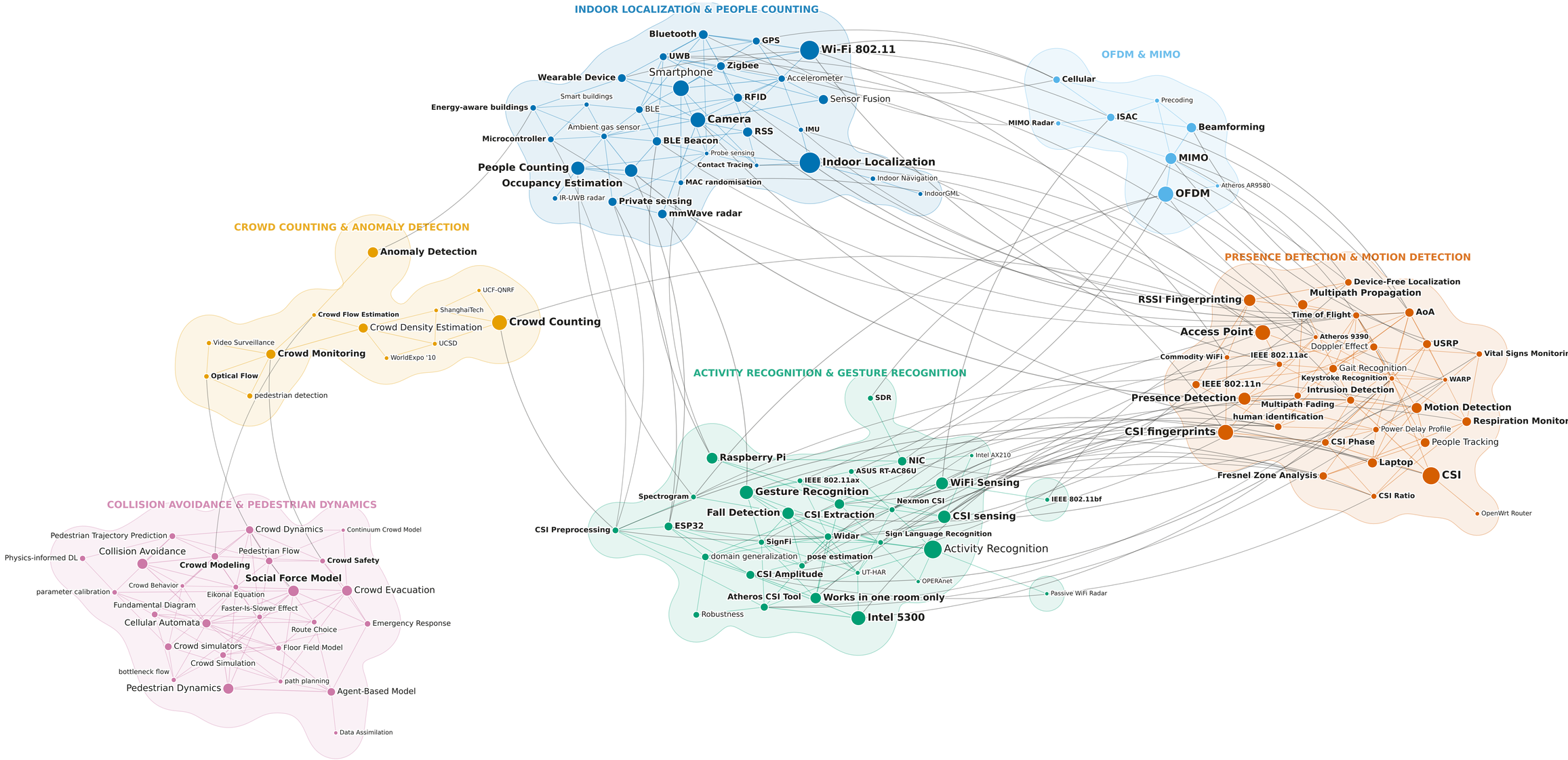
Wireless sensing

How the research topics in the library connect · 2026-11-01



Areas

Indoor Localization & People Counting

290 papers

also Wi-Fi 802.11, Smartphone, Camera, Occupancy Estimation

Collision Avoidance & Pedestrian Dynamics

92 papers

also Social Force Model, Crowd Evacuation, Cellular Automata, Agent-Based…

Presence Detection & Motion Detection

229 papers

also CSI, CSI fingerprints, Access Point, RSSI Fingerprinting

Crowd Counting & Anomaly Detection

157 papers

also Crowd Monitoring, Crowd Density Estimation, pedestrian detection,…

Activity Recognition & Gesture Recognition

245 papers

also Intel 5300, CSI sensing, WiFi Sensing, Fall Detection

OFDM & MIMO

125 papers

also Beamforming, ISAC, Cellular, MIMO Radar

Strongest bridges between areas

- CSI Amplitude — CSI Phase: 9 papers, 8.9× chance
- Crowd Monitoring — Crowd Safety: 5 papers, 7.5× chance
- Fresnel Zone Analysis — Widar: 6 papers, 7.2× chance
- AoA — pose estimation: 5 papers, 6.9× chance
- Atheros 9390 — Intel 5300: 6 papers, 6.1× chance
- Keystroke Recognition — MIMO: 5 papers, 6.1× chance
- ESP32 — Multipath Fading: 5 papers, 5.8× chance
- ESP32 — Private sensing: 8 papers, 5.7× chance

How to read

A dot is a topic: a method, problem, device or dataset. Bigger dot, more papers use it. A line joins two topics that papers use together more often than chance would give (thicker: more shared papers). A tinted region is an area: topics that link mostly to each other. Dark curved lines are bridges between areas. Position shows relatedness, not a measured quantity.

Abbreviations: AoA Angle of Arrival · BLE Bluetooth Low Energy · CSI Channel State Information · GPS Global Positioning System · IMU Inertial Measurement Unit · ISAC Integrated Sensing and Communication · MIMO Multiple-Input Multiple-Output antennas · NIC Network Interface Card (a Wi-Fi card) · OFDM Orthogonal Frequency-Division Multiplexing · RFID Radio-Frequency Identification · RSS Received Signal Strength · SDR Software-Defined Radio · USRP Universal Software Radio Peripheral · UWB Ultra-Wideband radio

Method: topics are curated vault notes that at least 4 papers link to; generic machine-learning and statistics notes are left out. Two topics are linked when they share at least 3 papers, appear together at least 2 times as often as chance (association strength, van Eck & Waltman 2009) and pass a hypergeometric test with Benjamini-Hochberg at q = 0.05; each topic keeps its 5 strongest links. Areas: Louvain communities, named by their two most-used problems. The links come from the reading pipeline and include mentions.