

THE FUTURE OF SOUNDSCAPE: IN DEPTH DETAILS ON SPATIAL AUDIO TO AI-DRIVEN PERSONALISATION

We stand at the threshold of an auditory revolution, one where sound escapes the flat confines of stereo to embrace the full sphere of human perception. Nowhere is this transformation more palpable than in Bangalore, where the hum of innovation syncs with the rhythm of tradition.

Walk into any of the city's cutting-edge research labs, and you will witness sound being reborn. At IISc's **Sonic Environments Lab**, engineers map how auto-rickshaw horns move around Church Street's curves in spatial audio simulations, while beneath your feet, the metro's vibrations translate into sub-bass frequencies you feel as much as hear. Over at **RV College**, students don AR headsets to analyse 3D soundscapes of **Vidhana Soudha**—where peacock cries ring from above, construction pulses spatially from the east, and street vendors' calls fade precisely as they would in physical space.

This isn't merely better audio. It's a fundamental rewiring of how we experience place and memory. Urban planners now test traffic noise dispersion before breaking ground. Architects walk through unbuilt structures, hearing how sound will travel. Historians preserve the acoustic fingerprints of vanishing Bangalore landmarks. The implications ripple far beyond entertainment, revealing new dimensions in civic design and cultural preservation.

BREAKING THE FLAT SOUND BARRIER

For decades, audio has been trapped in two dimensions—left and right channels that fail to capture how sound truly moves around us. But spatial audio is changing everything:

- Cinema's new frontier with the Dolby Atmos remix of *Kesariya (Brahmāstra)*

isn't just louder, it places each instrument precisely where it would be on a live stage, with A R Rahman's flute solos floating overhead and percussion radiating from the corners of the room.

- At IIT Madras, the **CARE lab** transforms seismic data into spatial audio landscapes allowing researchers to 'hear' earthquake patterns through 3D sound movement, making complex data intuitively understandable.
- Bangalore's **Art of Living** centre now uses ambisonic recordings (captured with **Sennheiser's AMBEO mic array**) for meditation sessions where Himalayan streams seem to flow around listeners, and temple bells resonate from specific directions to enhance focus.

AI'S SONIC REVOLUTION

From Fortune 500 boardrooms to smart city infrastructure, spatial intelligence is redefining enterprise audio. At a multi-national's Gurugram HQ, our AI-driven conferencing system now interprets room dynamics in real-time automatically suppressing echo in vacant spaces while amplifying vocal clarity during crowded townhalls. Nearby, voice cloning APIs (like those from Indian innovators **Skit.ai**) enable multilingual PA systems that switch between Hindi, Tamil, and Kannada announcements without losing the speaker's emotional cadence. The transformation extends to Pune's tech campuses, where our spatial audio installations create adaptive soundscapes: as employees transition between collaborative hubs and focus zones, algorithmic sound masking adjusts seamlessly, tuning itself to architectural blueprints to maintain perfect acoustic privacy. This isn't just incremental improvement—it's audio that thinks.



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SOUND THAT MEANS BUSINESS

Bangalore companies are proving audio branding goes far beyond jingles:

- **Swiggy's** 1700Hz order-confirmation tone was tested in Koramangala cafés to cut through ambient noise.
- **Wipro's** campuses use directional sound zones for simultaneous yoga/ market news streams.
- **Namma Metro's** planned AI announcements (similar to Singapore MRT) will adjust volume based on crowd noise (pending trials).

THE SOUND OF TOMORROW

The future of audio is no longer about isolated speakers filling rooms with sound, it's about intelligent systems that shape acoustic environments to human behaviour. Imagine boardrooms where voices emanate precisely from each executive's seat during global hybrid meetings, or luxury retail spaces where ambient soundscapes subtly shift as customers move between departments, guiding them through branded auditory journeys. In corporate lobbies, generative AI adapts background compositions in real-time, softening harsh frequencies during high-stress morning arrivals and transitioning to energising motifs as employee foot traffic peaks. This is spatial intelligence at work: sound that anticipates rather than reacts, enhances rather than intrudes. **AVSI** is engineering these invisible architectures where **Bose Professional's** dynamic beam steering meets **Biamp's** Machine Learning for self-optimising venues.

The result? Technology that disappears, experiences that resonate, and enterprises that speak not just to ears, but to instincts.