

Can Robots Feel Like Humans?

New iontronic skin with 1,110 sensors per cm² enables real-time tactile cognition.

Swipe for insights →

1,110 units cm⁻²

Sensor Density

The neural-hierarchical iontronic skin achieves unprecedented spatial resolution.

This density—over 100 times higher than most existing e-skin systems—allows for tactile perception at a resolution comparable to human skin, where mechanoreceptors are densely packed. The system processes these signals in real time, enabling robots to detect surface features as small as 300 micrometers.



01

Parallel Encoding Enables Speed

By using frequency-based position encoding, the system transmits signals in parallel rather than sequentially. This eliminates the latency bottleneck common in high-density sensor arrays, allowing for 100 frames per second transmission—matching human perceptual speed. The architecture mimics the nervous system's ability to prioritize and compress information before sending it to the brain.



02

Bandwidth Compression at Scale

The backend convergent compression reduces bandwidth consumption by hundreds of times. This is critical for deploying large-scale tactile systems in real-world robotics, where data transmission efficiency is a major constraint. The system doesn't just sense—it learns to filter, prioritize, and model interactions, approaching the cognitive layer of human touch.

MIT, Nvidia, Google & IBM-Trained. Cross Domain-Expert: Quantum, AI, Ethics, Sovereignty, Intelligence, Philanthropy.
Solepoint Planning. VUI AI Cloud Architect. AI Certifications Development. Quant/AI Instructor. Castor Venture Club Member.
Associate Broker.

George Arnold Alexander III, MPA

Director, ALEX Companies

Associate Broker, Alexander Tiffany Southwest, LLC dba ALEX.realestate, et.al.

Texas License #574878-B · Broker License #565194-BB

Broker, ALEX Real Estate · North Carolina License #367733

Independent Broker, ALEX Real Estate · Colorado License #II.100112456

george@alex.realestate · +1 713.918.9951



ALEX Intelligence
deep intelligence

ALEX Real Estate
genius real estate

ALEX Advisory
uncontested strategy

ALEX Cares
purposeful philanthropy

