LAB L3 | RESEARCH | IMMERSIVE & SPATIAL

Spatial Commerce Lab

Vision Pro - Quest - WebXR - NeRF - Gaussian Splatting

Immersive AR/VR experiences for retail, training and digital twins of physical spaces.

Thesis: When the buying or training context maps 1:1 to the physical world, conversion and skill transfer step-change.

CONVERSION UPLIFT	TIME-TO-COMPETENCY (TRAINING)	CAPTURE-TO-PUBLISH
+ 31%	47%	21d 36h

MANIFESTO

Why this lab exists

Spatial isn't a gimmick - it's the next interaction layer for commerce, training and field ops. The Lab ships production-grade pipelines for capture, reconstruction, governance and distribution across Vision Pro, Quest and WebXR, with measurable conversion and skill-transfer outcomes.

KPIS

Outcomes we measure

- Conversion uplift: + 31%
- Time-to-competency (training): 47%
- Capture-to-publish: 21d 36h

ACTIVE EXPERIMENTS

What the lab is testing now

> Gaussian Splatting at retail scale
Capture pipelines for entire stores; sub-second loads on Quest 3 and Vision Pro.

> Try-on with consented likeness
Per-user avatars with consent ledger; never trained on, never persisted beyond session.

> Field-ops digital twins
1:1 plant twins for safety, training and remote expert assist.

> Spatial telemetry
Gaze, dwell, hand-pose analytics - anonymised, privacy-preserving, measurable.

SHIPPABLE ARTEFACTS

Everything that ships

> Capture rig + pipeline
Reference rig, photogrammetry pipeline, NeRF / Splat training, asset CDN.

> WebXR runtime
Cross-device experience layer for Vision Pro, Quest, Android XR and browser fallback.

> Spatial CMS
Author, version and govern spatial scenes; A/B test like web pages.

> Consent + telemetry SDK
Per-session consent capture and privacy-preserving spatial analytics.

> Reference experiences
Storefront, training bay, plant twin and museum patterns ready to fork.

LAB TEAM

Who you'll work with

- Spatial Principal
- Computer Vision Engineer (NeRF / Splat)
- WebXR / RealityKit Engineer
- UX / Interaction Designer

ENGAGEMENT TIMELINE

Weeks 1-10 - first WebXR pilot live by week 4

1. **Weeks 1-3 - Capture + reconstruct**
   On-site capture, photogrammetry / Splat pipeline, asset CDN ready.
2. **Weeks 3-6 - Cross-device runtime**
   Vision Pro + Quest + WebXR experience live with consent + telemetry.
3. **Weeks 6-10 - Measure + iterate**
   A/B uplift on conversion or competency, spatial CMS workflow embedded.

FLAGSHIP PODS

Squads that productionise this lab

- Spatial Storefront Pod
- Field Training Pod
- Plant Twin Pod
- Museum & Heritage Pod

PARTNERS

Who we collaborate with

Apple Vision Pro - Meta Reality Labs - Niantic 8th Wall - Unity - Unreal - WebXR W3C

PUBLICATIONS

Receipts

Gaussian Splatting beats NeRF on retail-scale capture pipelines
SIGGRAPH Asia (poster) - 2025

Conversion uplift in spatial commerce: a 14-brand study
AXP Internal Whitepaper - 2026

FAQS

What partners actually ask

Q. Do we need a Vision Pro budget per user?
A. No - WebXR fallback covers 95% of audience on existing devices; Vision Pro and Quest are premium tiers.

Q. How do you handle likeness consent?
A. Per-session consent ledger, ephemeral avatars, no model training on user likeness, audit log on every interaction.

Q. File sizes?
A. Gaussian Splatting + streaming LODs hit sub-20MB scenes for retail-scale captures.

Q. Is this AR or VR?
A. Both - and increasingly the same runtime. We target a single experience that adapts to device and context.

Partner with Spatial Commerce Lab

Outcome-priced. Sovereign by default. Refund-backed if the contracted KPI isn't hit.

Apply: alfaxprienz.com/labs/spatial-commerce-lab#partner