

Bruno Díaz

Spatial Computing Engineer & Technical Architect Mexico City, Mexico | [ganbare@brunirows.xyz] | [LinkedIn](#) | [Website](#) | [GitHub](#)

Professional Summary

Spatial Computing Engineer, Technical Architect, and SideFX Certified Houdini Instructor with over 8 years of experience combining advanced technical art, computer vision, and procedural systems. I specialize in designing real-time interactive experiences, architecting USD-based pipelines, and developing Sim2Real synthetic data generation workflows. Passionate about empowering teams through education and creating robust, scalable technical solutions for XR and immersive media. (I really love programming)

Core Competencies & Technologies

- **Spatial Computing & XR:** Real-time Object Tracking, Computer Vision, Smart Glasses Integration, HTC Vive, Oculus Rift, Kinect, Leap Motion
- **Real-Time Engines:** Unity 3D, Unreal Engine, s&box, UEFN,
- **Procedural Systems & VFX:** Houdini (VEX, Solaris/USD, TOPs/PDG), Procedural Generation, Synthetic Data Generation, NVidia Omniverse, Touch Designer
- **Automation & Pipeline:** Python, Visual Scripting, ComfyUI, Node-based Architectures
- **Leadership & Education:** Curriculum Design, Advanced Technical Training, Cross-functional Team Leadership

Recent Projects

1. **Voice-Activated 3D Object Spawning** *Architected an end-to-end spatial computing pipeline integrating Meta Ray-Ban smart glasses for real-world capture. Implemented voice-command segmentation and AI-driven 3D model generation, enabling dynamic runtime asset spawning within Unreal Engine.*
2. **Spatial Context-Aware AI Assistant** *Developed an automated, multi-engine synthetic data pipeline to train real-time vision models. Deployed context-aware spatial instructions directly to AR smart glasses and mobile devices, bridging physical environments with AI assistance.*
3. **Breaking the NavMesh: s&box Citizen MCP** *Engineered a novel agentic approach for a custom s&box puzzle room. Replaced traditional behavior trees with a custom Model Context Protocol (MCP) server, establishing real-time communication between Node.js and C# via WebSockets for dynamic AI navigation.*
4. **Autonomous Agentic Mesh-to-Model Workflow** *Designed an end-to-end, multi-agent Sim2Real pipeline utilizing Houdini, Isaac Sim, and YOLOv8. Successfully converted raw 3D meshes into highly accurate computer vision models with zero manual data labeling, drastically accelerating AI training workflows.*
5. **SAM-YOLOv8-Supervision (Futbot & Infotec Bootcamps)** *Led the technical development and instructional design for advanced computer vision bootcamps. Integrated Segment Anything Model (SAM), YOLOv8, and Supervision to build automated tracking and segmentation pipelines for sports analytics (Futbot & Infotec).*

Professional Experience

Brunirows — Mexico City, Mexico **R&D Sim 2 Real** | December 2025 – Present

- Lead research and development in Sim2Real workflows, focusing on synthetic data generation, computer vision, and spatial computing integrations.
- Design and optimize automation pipelines to streamline technical art and data processing tasks.

CENTRO diseño | cine | televisión — *Mexico City, Mexico* **XR Developer Specialist & Educator** | *January 2019 – Present*

- Architect real-time applications and procedural pipelines for immersive experiences and academic research.
- Design curricula and deliver advanced training in Houdini (VEX, USD, PDG) and real-time engines for higher education students.
- Serve as the technical bridge between creative direction and engineering execution.

Centro de Cultura Digital — *Mexico City, Mexico* **Immersive Experiences Programmer** | *February 2018 – December 2018*

- Developed VR and AR installations for major exhibitions featuring renowned artists in residence.
- Implemented complex hardware integrations including Leap Motion, Kinect, HTC Vive, and Oculus Rift for real-time interaction.

Taijoystick Studio Lead Programmer | *July 2017 – December 2017*

- Lead programmer for mobile games "Fluffy World" and "Tiburcio's Escape" (Android).
- Managed Unity implementations, API integrations, and cloud services via Google Play Console.

Education & Certifications

- **SideFX Certified Houdini Instructor** (SideFX)
- **CENTRO | Diseño, cine y televisión:** Specialization in Data Visualization (May 2024 - May 2025)
- **SAE Institute México:** Bachelor's Degree in Video Games and Programming (2014 - 2017)
- **Udemy Academy:** Voxel World Course, Shader Development from scratch (Unity 3D)
- **Edumac:** Advanced Web Design, Digital Content/Multimedia