

Alvaro Castaneda

915-843-3396 | varomix@varomix.net | linkedin.com/in/varomix | <https://varomix.github.io>

Software Engineer and Technical Artist with 20+ years of experience building graphics applications, creative tools, automation systems, and production infrastructure for VFX and AI workflows. Experienced in developer tools, rendering systems, large-scale asset pipelines, and workflow automation.

EXPERIENCE

Technical Artist (Software Engineering) — Meta Reality Labs

Aug. 2021 – Present

Remote, US

- Designed and built large-scale data processing pipelines handling 5M+ 3D assets from commercial and open-source providers to support generative AI model training workflows.
- Built AI-agent-powered tools integrated directly into Houdini, enabling natural language interaction, workflow automation, and scalable procedural content generation.
- Developed VLM-based automated QA and visual validation pipelines for generated assets at scale.
- Procedural hair systems contributed to published research: HairSapiens and Quaffure (real-time neural hair simulation).
- Developed and maintained core Houdini tooling, onboarding systems, and pipeline infrastructure used across Reality Labs.

Houdini Procedural Artist — AI.Reverie

Jan. 2019 – Dec. 2021

Greater New York City Area

- Houdini Procedural TD on RarePlanes Synthetic Dataset (In-Q-Tel / CosmiQ Works); built systems generating thousands of asset variations for ML and Computer Vision applications.
- Developed Python pipeline tools to manage thousands of assets; built Unreal Engine spawning and point-cloud instancing systems for large-scale city scenes.

Founder / VFX Artist — MIX Studio

Feb. 2012 – Dec. 2021

Ciudad Juárez, Mexico

- Developed procedural VFX workflows and simulation pipelines for film, TV, and advertising productions including Jumanji: Welcome to the Jungle.
- Founded a globally recognized Houdini training platform; produced content in partnership with SideFX, Redshift, Arnold, and Pixar RenderMan.

Independent Software Projects — MIX Software

Portfolio: <https://varomix.github.io>

- **Spark**: 2D animation application built from scratch with custom UI, vector graphics, GPU rendering, and pressure-sensitive drawing.
- **Mixture**: Node-based image compositing app for iPad, built with Swift & Metal, with a custom node graph, PBR rendering.
- **Mix**: Designed and implemented a programming language and compiler built as an AI-assisted development experiment, featuring generics, concurrency, C interop, LLVM/C backends, and a built-in LSP.
- **OhCAD**: Built a parametric CAD application exploring procedural modeling and interactive editing workflows.

PROJECTS & PUBLICATIONS

Featured contributor in 3D WORLD magazine (4 publications).

Procedural hair systems contributed to published research papers including HairSapiens and Quaffure (real-time neural hair simulation).

TECHNICAL SKILLS

Languages: C, C++, Python, Odin, Swift, TypeScript, GLSL, VEX

Tools & DCC: Houdini, Maya, Blender, Nuke, Unreal Engine, OpenUSD, Solaris

AI & Infrastructure: Generative AI workflows, VLM-based QA, Synthetic Data, Procedural Generation, Automation

EDUCATION

IEU Universidad - Bachelor of Science, Artificial Intelligence

Expected 2026

Machine Learning Specialization - DeepLearning.AI, Stanford University

Udacity - C++ Developer Nanodegree, Computer Science