

Daniel Monaghan

Senior iOS & Spatial Computing Engineer | 3D Gaussian Splatting | Computer Vision | ARKit | Metal | Photogrammetry

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SUMMARY

Senior iOS / Spatial Computing Engineer and Filmmaker with more than twenty-five years experience spanning film, 3D computer graphics, Augmented and Virtual Reality, and photogrammetry. Daniel is an innovative, collaborative and lead developer on several iOS apps with a strong lean towards camera based technologies built on ARKit, RealityKit, Metal and OpenUSD, with 100,000+ user sessions. Daniel's Canne's Lion and Yellow Pencil award-winning cinematography and editing background brings real-world camera craft to real time rendering, reconstruction of virtual-cameras to render stunning visuals with respect to realtime framerates and limited latency.

EXPERIENCE

Lead iOS Developer & 3D Graphics

2025-2026, San Francisco

Braintrance

Designed, built and shipped world's first iOS native 3D Gaussian Splatting social platform. Implementation of instant loading 3DGS presentation with pre-GPU decodes in all formats including PLY, SSOG, RAD. Swift, SwiftUI, Objective C++ and Metal. Created an on-device 3D reconstruction pipeline. Dynamic LODs with offscreen renderers written for maximum.

Lead iOS Developer & 3D Graphics

2021-Present, Los Angeles

Viz by Zugazi

Creator of Viz Pro, a real-time virtual cinematography camera for iPhone/iPad - ARKit based with Metal rendering using Pixar's OpenUSD pipeline. In use at international film and animation studios; developed with support from Emmy-winning cinematographer Christopher Soos and director Jeff Renfroe. 100,000+ sessions.

iOS Developer and Computer Vision

2025, San Francisco

HeyBLU

Automated baseball strike-zone analysis iOS app, On-device ML and Computer vision, multipeer connectivity, real-time video pipeline and strike detection in SwiftUI and ARKit. The app is designed on field use by coaches and umpires to track baseball player pitch accuracy and avoid uncertainty on the field without needing an expensive laser calibrated setup.

Founder, Software Engineer, CEO

2012-Present, Auckland

Lucky Bulldozer LTD

Boutique software development and computer graphics company specializing in Augmented Reality, spatial computing, photogrammetry, iOS app development, prototyping and R&D. Recent projects include "Take Sixty" (2026) a health based app for respiratory reset, 3D Vue (2025) a QuickLook-style point-cloud and 3D model viewer, Flotogram - an Augmented Reality art app 2017, DotSwarm - a point-cloud animation pipeline 2014, ServerSFM distributed Structure-from-Motion 2012.

Unreal Engine Developer
StoryBox

2019, Wellington

Theatrical AR/VR experience developer for experiential and Magic Leap; real-time tsunami and terrain simulations for the national museum (Te Papa) permanent nature exhibition.

Photogrammetry Developer/Capture Photographer
RealityVirtual.co

2016-2019, Auckland

Architect of DeepPBR ML, a texture synthesis (NVIDIA Inception, USD 250k Epic MegaGrant). Heritage digitization of NZ Parliament, the Treaty of Waitangi, CERN's Large Hadron Collider, Engineered a 10-projector Unreal nDisplay VR installation at EPFL, Switzerland.

In-House Content Creator
Clemenger BBDO

2016-2019, Wellington

Filmed and edited award winning PSA campaigns for New Zealand Government, contributing to Cannes Lions, D&AD, Axis and Clio award-winning entries.

Editor/Cinematographer/Digital Imaging Technician
Film Industry

1998-2013, International

Served in multiple roles throughout the film industry in TV Commercials, Feature Films and Music Videos. for Venice Film Festival and NZIFF screenings; MTV Europe nomination; co-directed Heineken "Open"; DIT/video-split on *Spartacus* and *Power Rangers* — called the best on-set compositor he'd worked with by Academy Award-winning cinematographer Bill Pope; assistant editor on *Vertical Limit*.

SKILLS

SOFTWARE LANGUAGES: Swift, Bash, MSL, Objective-C/C++, Python

CORE FRAMEWORKS: ARKit, RealityKit, Metal, UIKit, SwiftUI, Vision, CoreML, Core Image, AVFoundation, OpenUSD

VISION & GRAPHICS: SfM, Photogrammetry, 3DGS, RealityCapture, Metashape, PBR, GPU Optimisation, Real-time Rendering, Unreal Engine, Unity

CLOUD & INFRA: Git/GitHub, CI/CD, UI Testing, Linux, AWS (EC2, S3, IAM), Claude Code, Codex, Cursor, OpenAPI

EDUCATION

South Seas Film & Television School - Certificate in Film & Television

ACHIEVEMENTS & EDUCATION

Cannes Lions, D&AD, Clio and Axis award-winning campaigns: Clemenger BBDO
D&AD Yellow Pencil, One Show Silver: Yellow Pages Treehouse

REFERENCES

TODD MENDLEOFF
JONATHAN