ngollay36@gmail.com 714-313-9558 Huntington Beach, CA

NATHAN GOLLAY

Compassionate ∩ Curious ∩ Persistent ∩ Innovative ∩ Collaborative

EDUCATION

➢ BS in Liberal Arts and Engineering Studies (LAES) from Cal Poly SLO with dual courses of study in **Machine Learning** and **Creative Technology**. LAES Major Club President.
➢ Minors (3): **Computer Science, Math,** and **Philosophy**

EXPERIENCE

LEAD ENGINEER, COMPUTER VISION TEAM AT LUMIRA, OCEAN SITE ONE: 2022

Invented core technology for an immersive international event. Created real-time algorithms, hardware interface, and custom 360° video VLC player for interaction with a theater-size 3D projector screen, it to a 3D touch screen. Guests could step up, 'grab' and 'move' the video to new perspectives, turning film into a living, explorable world.

HEAD MANAGER, MOBILE APP DEVELOPMENT TEAM AT FISA-B: 2023

Led cross-disciplinary teams in front-end, back-end, and UI/UX in development of a multi-platform mobile application using React Native. Implemented scrum meetings with AGILE, managed project backlog with Trello, and delegated sprint tasks.

R&D LAB MANAGER, EXPRESSIVE TECHNOLOGY STUDIOS: 2023

Managed a Dolby Atmos certified movie studio with 36 individually addressable speaker channels, 3D Barco Projector, Avid S6 Mixing Board, Virtual Reality Studio, Recording Suite, Animatronics Equipment, and Motion Capture Suits under Academy Award Winner, Jack Cashin. Facilitated investor and donor relations, directed R&D.

FOUNDER, WAVEFRONT AUDIO: CURRENT

Invented surround sound system that produces sound left, right, front and behind with only a single device under TV. Created app for users to scan their room in ~30 seconds and automatically calibrate the 128 built in speakers with Machine Learning. Developed from concept to prototype to DFM spec sheets. Collaborated with IP law firm to protect and license invention, led website/branding, produced investor-facing decks, and led financing.

SPECIALTIES

➢ ***Machine Learning:*** Interactive ML, DL Pipeline, PINNs, Linear Algebra, EDA, Python
➢ ***Robotics:*** Animatronics, Computer Vision, Gesture Recognition, Teleoperation, HCI, GX
➢ ***Electronics*:** ESP32, Arduino, Raspberry Pi, Motors, Sensors, Windows/Linux/Mac, C++
➢ ***Media*:** DSP, Psychoacoustics, Acoustic Measurement, Photography, DIP, OpenGL
➢ ***Prototyping*:** CAD/CAM, DFM, 3D Printing (SLA/FDM), Slicer Scripts, CNC and Laser
➢ ***AGILE:*** Project Management, Trello, Storyboarding, Research, Writing, Public Speaking
➢ ***Business*:** Supply Chain, R&D Procurement, Intellectual Property, Investor Relations, FIN

SELECTED PROJECTS

FRIDA Animatronic with LLM: Has thematic conversations while maintaining eye contact.
Remote Sound Localization: Creates real-time 3D sound effects in immersive environments.
Sign Language and Mouse Pointer: Full control of computer solely with in air hand gestures.
Phase Retrieval PINN: A novel deep learning approach to holographic display imaging.
Fluid Simulation and Volume Rendering: Tool for visualizing 3D differentials in gas density.
Expanding Knee Replacement for Adolescents: An oxidation-driven expanding prosthesis.

OTHER PURSUITS

'Super Complex' Origami Design, Advanced Open Water (AOW) Certified Scuba Diver, Ink Drawing, Literature, Philosophy, Writing, Surf Photographer, Big Mountain Skier