

NATHAN BLAIR

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EDUCATION

University of California, Santa Barbara

Master of Science in Media Arts and Technology (Chancellor's Fellowship)

Real-time music software, 3D user interfaces, Granular Synthesis

Committee: Curtis Roads, Jennifer Jacobs, Karl Yerkes

May 2023

GPA: 4.0

University of California, Berkeley

Bachelor of Science in Electrical Engineering and Computer Science

Machine Learning, Linear Algebra, Linear System Theory, Probability

May 2020

GPA: 3.821

EXPERIENCE

Lunacy Audio | Digital Signal Processing Engineer

May 2023 - Present

- Lead C++ engineer
- Developed granular delay engine capable of rendering hundreds of virtual particles
- Implemented real time zero latency non-uniform convolution algorithm
- Engineered UI and interoperability code (TypeScript, React, QuickJS)
- Assisted on UX design and vision

NASA JPL & Caltech | Computer Vision Intern

Summer 2019

- Compared machine learning models for classifying near earth objects (Linear, MLP, Siamese Nets, ResNet)
- Implemented visualization methods for model explainability (SmoothGrad saliency maps)

Summer 2018

- Trained a faster-rcnn neural network to detect bright comets in infrared data taken by the WISE satellite.
- Built a library for object detection on astronomical data that extended Tensorflow's object detection API.

Summer 2014, 2015

- Performed daily quality assurance checks on minor planet candidates.
- Discovered previous undetected comets by "stacking" candidate images.
- Co-Authored "The NEOWISE-Discovered Comet Population and the CO+CO2 Production Rates"

UC Berkeley | Machine Learning and Control Research

January 2018 – June 2019

- Combined control algorithms (LQR) with computer vision for path planning
- Utilized simulated environments to increase data-efficiency
- Tested our algorithm on "turtlebot" robots and compare the results to established algorithms
- Considered safety guarantees for complex, risky and poorly understood real world environments.

PROJECTS

NTHN AUDIO

- Developed, marketed, and sold music production software (VST3, AU, Max for Live)
- 6750+ customers, 12 products
- Rolled my own data rights management system using Firebase, nodeJS, RSA, Mailgun

August 2021 - Present

SKILLS AND INTERESTS

Coding Languages: C++, Python, JavaScript, C, GLSL, HTML/CSS ...

Software/Tools: Torch, NumPy, Git, JUCE, Ableton Live, Adobe Suite, MaxMSP, TouchDesigner, Blender

Interests: Generative Art, Music Production, Edge AI, Athletics, Nature, Cooking