NATHAN BLAIR

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EDUCATION

University of California, Santa Barbara | Santa Barbara, CA
Ph.D. in Media Arts and Technology September 2021 – Present
Currently researching neural-granular synthesis under the supervision of Curtis Roads

University of California, Berkeley | Berkeley, CA
Bachelor of Science in Electrical Engineering and Computer Science August 2016 – May 2020
Graduate Coursework: Computer Vision, Trustworthy Deep Learning, Deep Reinforcement Learning, Linear System Theory GPA: 3.821
Undergraduate Coursework: Machine Learning, Artificial Intelligence, Jazz Improv, Algorithms, Comp. Photography, Probability and Random Processes, Optimization Methods, Linear Algebra and Differential Equations, Data Structures, Signals and Systems, Discrete Math and Probability Theory, Computer Architecture

EXPERIENCE

Personal Work, Creative Projects, and Part Time Positions
May 2020 – September 2021

- Organized online concerts, distributed print zines, and built community as an admin for "ceremony"
- Developed and sold Max for Live devices: "Frog Harmonizer," "Hyperspeed: Global Pitch Shift"
- Co-produced music videos for Alice Longyu Gao: "She Abunai," "Kanpai," and "Underrated Popstar"
- Gained music industry and video editing experience as a personal assistant for Alice Longyu Gao
- Produced and released multiple musical projects (see my website, www.nathanblair.me)

NASA JPL | Computer Vision Intern (Asteroids)
June 2019 – August 2019

- Built machine learning models for classifying near earth objects
- Compared deep neural networks, linear models, kernel models, and random projection methods
- Designed robust visualization methods for model explainability
- Acted as the sole machine learning scientist on the NEOWISE team

UC Berkeley | Machine Learning and Control Research with Claire Tomlin
January 2018 – June 2019

- Designed new data-efficient machine learning methods for controlling complex robotics systems
- Tested our methods on real "turtlebot" machines and compare the results to established ML algorithms
- Compared results in the real world to results in simulation
- Considered safety guarantees for complex, risky and poorly understood real world environments

NASA JPL | Computer Vision Intern (Comets)
June 2018 – August 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 extends Tensorflow's object detection API
- Wrote scripts for neural network training and evaluation, data collection, and image annotation
- Maintained, commented, and tested a large codebase

Caltech | Research Support Intern
May 2014 – August 2015, May 2015 – August 2016

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

SKILLS AND INTERESTS

Coding Languages:	Python, C++, MaxMSP, JavaScript, Processing, ChucK, C, Java, SQL, PHP, HTML, CSS
Software:	Ableton Live, After Effects, Premiere Pro, Photoshop, Blender, TouchDesigner, Spark AR
Interests:	Machine Learning, Neural Synthesis, Generative Art, Higher Dimensions, Consciousness, Ethical AI