ANDREW PORT

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PhD Student in **Computer Engineering**, *UC Santa Cruz*
M.S in **Applied Mathematics**, *UC Davis*
B.S in **Mathematics**, *Worcester Polytechnic Institute*
Northfield Mount Hermon High School

PROFILE

Researcher and PhD student working in UCSC **Computer Vision** Lab on **deep learning** models for a variety of tasks. Strong background in **mathematics**. Expert **python** coder. Confident with writing and communication. Looking for engineering internship opportunities related to computer vision.

RECENT EMPLOYMENT

(2017-Current) **Researcher & TA @ UCSC Computer Vision Lab: UC Santa Cruz**
- Developing a methodology communicating visual features and geometries to users with visual impairments using computer vision and audio synthesis.
- Created exit sign (quadrilateral) detection system for indoor localization using Mask-RCNN w/ custom post-processing step. Achieved accuracy superior to ground truth.
- Created a custom CNN-based classifier used by ecologists to monitor invertebrate populations in rivers.

(2019 Summer and Fall) **AI Research Intern @ FXPAL**
- Invented a novel method of visual-to-auditory sensory substitution (i.e. communicating visual information aurally) using a GAN to encode visual information into audio. Demonstrated that humans could perceive facial features (extracted by a facial recognition model) using this technique.
- Authored two related patents, one in US (granted) and one in Japan (pending), and two related papers.

(2018 Summer) **Senior Technology & Software Intern @ Rare.org**
- Designed and developed computer vision technology to help fishermen in Belize and Honduras identify the origin of a fish that had already been brought to land. The goal being to enable the protection of overfished areas.
- Built a custom background for fisherman to take photos against. This helped with color correction and image rectification.
- Built a pipeline to color correct, rectify, segment, and classify the images taken by the fishermen.

(2013-2017) **Adj. Professor of Mathematics and Statistics @ Sacramento City College**
- Taught mathematics and statistics courses at both high school and college levels.
- Taught as an Extended Opportunity Programs & Services (EOPS) professor for one year.

NOTEWORTHY INDEPENDENT PROJECTS

svgpathtools (2016): Creator of the somewhat popular (e.g. see pystats) actively contributed to library of object-oriented tools for manipulating SVG Path objects and Bezier curves in Python

SELECT PUBLICATIONS AND PATENTS

- C. Kim*, A. Port*, M. Patel, *Face-to-Music*, CVPR Sight and Sound (2021)
- Port, C. Kim, M. Patel, *Deep Sensory Substitution*, submitted to WACV (2021)
- Andrew Allan Port, Doga Buse Cavdir, Chelhwon Kim, Mitesh kumar Patel, Donald Kimber, Qiong Liu. *Transmodal Translation of Feature Vectors to Audio for Assistive Devices* JP Patent No. JP2021056499A (published, April 2021); US Patent No. US11069259B2 (granted, July 2021)