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

Computer vision engineer, math lover. 9+ years experience w/ Python. 5+ years experience w/ TensorFlow and other computer vision tools. Creator of the svgpathtools Python package and other open-source projects.

RECENT EMPLOYMENT

(2017-Current) **Researcher & TA @ UCSC Computer Vision Lab: UC Santa Cruz**

- Developing a methodology for 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) **Computer Vision 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 fish that had already been brought to land. The goal being to enable the protection of overfished areas.
- Built a custom background for fishermen to take photos against. This enabled 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)