

## 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

Summer Availability: June 13 - Sept 26

## PROFILE

Researcher and graduate student working in UCSC **Computer Vision Lab** on **deep learning** models related to semantic and instance segmentation. Strong background in **mathematics**. Expert **python** coder. Looking for summer internship opportunities that will provide practice working with deep learning techniques.

## RECENT EMPLOYMENT

(Current) **Researcher @ UCSC Computer Vision Lab: University of California, Santa Cruz**

Grad student working in the computer vision lab on deep learning models for indoor scene understanding with the purpose of aiding people with visual impairments.

(Current) **Senior Technology & Software Intern @ Rare.org**

Developing deep learning based computer vision technology for monitoring fishery spatial population distributions in Belize and Honduras. Designed and iterated data collection and analysis methodology. Use semantic segmentation and binary image classification to differentiate between local groups of the same species of fish.

## NOTEWORTHY INDEPENDENT PROJECTS

**svgpathtools** (2016): Creator of the somewhat popular (over 81,000 PyPI downloads counted by BigQuery) library of object-oriented tools for manipulating SVG Path objects and Bezier curves in Python. Has become an actively contributed to community open source project

-- <https://pypi.python.org/pypi/svgpathtools>

**Ear-Those-Notes** (2016): CLI-based ear training software including real-time melodic analog to midi conversion

-- <https://pypi.python.org/pypi/Ear-Those-Notes>

**Rectangle-Tracker** (2016): A prototype for tracking a piece of paper that's being written on

-- <https://github.com/mathandy/python-opencv-rectangle-tracker>

## ACADEMIC HONORS AND AWARDS

**NSF VIGRE Summer Graduate Fellowship:** Awarded to top applicants from the UC Davis Mathematics Department – awarded for research in geometric invariant theory

**WPI Provost Major Qualifying Project award for Mathematical Sciences:** Awarded each year to best entry -- awarded for research modelling fibroblast cell movement

## HOBBIES

Songwriter, guitarist, and vocalist – mostly bluesy rock, pop, and bluegrass

## TECHNICAL SKILLS (THINGS I'VE USED IN PRACTICE, OUTSIDE SCHOOL)

**Deep Learning:** Convolutional networks (CNNs)

**Classical Machine Learning and Statistical Methods:** regression models, clustering methods, dimensionality reduction, regularization, singular value decomposition (SVD), inferential statistics, hypothesis testing, statistical confidence

**Time Series Analysis:** time series analysis, multiple continuous time series alignment, dynamic time warping

**Image Analysis:** gradient-based edge detection, contour finding, image segmentation, thresholding

**Data Analysis, Signals Analysis:** Fourier analysis, wavelet transforms, topological sorting, working w/ noisy data

**Programming Languages:** MATLAB, Python -- NumPy, SciPy, matplotlib, SageMath, OpenCV, TensorFlow

**Virtualization and Cloud Computing:** VMWare, VirtualBox, Docker, Amazon AWS

**Mathematical Strengths:** Variational Analysis, Real and Complex Analysis, Differential Geometry, Fourier Analysis, Linear Algebra, Tensor Algebra, Tensor Calculus, Topology, Graph Theory, Algorithmic Analysis