William Lee

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EDUCATION

Swarthmore College: *B.A. in Computer Science, Class of 2020.* **GPA**: 4.0 Swarthmore, PA

Skills: OpenCV, TensorFlow, Numpy, SciPy, SciKit-Learn, Jupyter Notebooks, Linux

Coursework: Machine Learning, Computer Vision, Linear Algebra, Multivariable Calculus, Data Structures and Algorithms

WORK EXPERIENCE

NASA Ames Mountain View, CA

Computer Vision and Machine Learning Intern May 2017 – Sept 2017

Software intern in three project groups at NASA Ames:

Ames Stereo Pipeline:

- Optimized NASA's geodesy/stereogrammetry software suite in C++ and decreased overall CPU usage on the NASA Ames SuperComputer (NAS) by 10%.
- Implemented an adaptive Gaussian filter to preprocess satellite imagery for stereo reconstruction.

Project Nemo:

- Implemented coral reef classification algorithms in QGIS and TensorFlow (CNNs, SVMs, MAP).
- Led the design and implementation of a computer vision image alignment pipeline used to align UAV and satellite imagery.
- Prototyped a novel machine learning pipeline to classify coral reef morphology from satellite imagery.

Exploration Ground Data Systems (xGDS):

- Full stack web development on Lunar and Martian EVA Mission Planning software using HTML5, CSS, Django, and Handlebars.js

NASA Ames Mountain View, CA

Software Engineering Intern June 2016 – Aug 2016

- Developed a web interface allowing mapping of control points between images taken by astronauts on the ISS to Google Earth satellite imagery using jQuery and the OpenSeadragon library (JavaScript)

OTHER EXPERIENCE

Swarthmore College Computer Society (SCCS) Swarthmore College

Staff Member Oct 2016 – Present

- Led a team of 4 SCCS members in creating a URL shortener (http://swat.life) using PHP and MySQL.
- Led backend design and implementation and oversaw front-end development team

The Paly Voice Palo Alto High School

Webmaster Aug 2015 - June 2017

- Worked in a team of 4 to maintain and improve the Paly Voice news publication website (palyvoice.com)
- Gained experience with unix, ngingx, wordpress, and cloudflare.

PROJECTS

Convolutional Neural Network for MNIST Digit Classification Spring 2017

- Designed and implemented a Convolutional Neural Network using TensorFlow and Keras to classify MNIST digits using TensorFlow up to 99% test set accuracy..

iSpot Bench Press Tracker Spring 2017

- Created a program that determines when a spotter should spot a bench presser.
- Used OpenCV to perform thresholding, morphological operations, object tracking, and connected component analysis.

ID3 Tree Implementation Fall 2017

- Implemented an ID3 Decision Tree using Python.
- Optimized classification for the UC Irvine Heart Disease and Diabetes datasets utilizing by plotting learning curves and using N-Fold Cross Validation.

Programming Languages: Python, C++, HTML5, CSS, PHP, MySQL, JavaScript/jQuery