Leo S. Neat

Contact Information

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Education

Univeristy of California Santa Cruz, Santa Cruz, CA. United States   Fall 2015 - Spring 2019
Computer Science - Bachelors of Science   GPA 3.92

Technical Skills

Programming Languages: Python, Java, C, C++, Android Java, Android XML, Bash

Tools: Git, OpenCV, LaTex, Cmake, Android Studio, TensorFlow Object Detection API(familiar), TensorFlow Lite(familiar)

Relevant Coursework: Computer Vision, Advanced Programming, Machine Learning, Algorithm Analysis, Data Structures, Comparative Programming Languages, Computer Systems & Assembly Language, Abstract Data Types, Web Development, Discrete Math, Linear Algebra, Multivariable Calculus, Probability and Statistics, Technical Writing

Professional Experience

UC Santa Cruz Computer Vision Lab, Santa Cruz, CA.   December 2016 – Present
Software Research Assistant
- Developed an Android application that is used to test and compare the inference speed of TensorFlow Lite models on mobile devices
- Studied the costs and benefits of on-board vs. server side inference for mobile Convolutional Neural Networks
- Responsible for the development of an Android application to be used by the visually impaired to identify text in their surroundings. Application streams image data from the phone's camera to a Linux server which returns the location and characters of text found in the Android camera's capture range.

Aquifi Inc., Palo Alto, CA.   Summer 2018
Software Architecture Intern
- Responsible for developing an Android application that allows users to quickly offload data from Aquifi devices to different servers for quality assurance, regression testing, training, etc...
- Wrote, tested, and modified system level camera code that ended up in production
- Developed an algorithm to detect corrupted frames in camera streams and recover the streams if necessary

Jet Propulsion Laboratory, Pasadena, CA.   Summer 2014 – Summer 2017
Software and Hardware Testbed Development Intern   Summer 2017
- Designed and built a camera characterization system for EMCCD camera evaluation using an Android phone to emulate a star.
- The camera characterization system is currently being used by different teams at NASA for spaceflight detector evaluation

Computer Vision Intern   Summer 2016
- Wrote code that implemented OpenCV's tracking methods in order to determine cloud heights from MISR (Multi-angle Imaging SpectroRadiometer) satellite images
- Researched different forms of feature detection and optical flow in order to solve a stereo problem apparent in MISRs images

Software and Hardware Intern for Optical Systems Summer 2015

- Developed code that reduced the execution time of the Wide-Field Infrared Survey Telescope (WFIRST) coronagraph testbed by a factor of 14

- Wrote an algorithm for detecting cosmic radiation in images from Electron Multiplying Charge Coupled Device (EMCCD) cameras

Software Intern Summer 2014

- Wrote a Graphical User Interface which was utilized by JPL scientists for data manipulation and visualization of images

- Developed master class for multi-core processing system for use in JPL computer lab

PUBLICATIONS

L. Neat, R. Peng, S. Qin, R. Manduchi "Bringing Transparency Design into Practice." 23rd International Conference on Intelligent User Interfaces. ACM, 2019.

Michael Bottom, Leo S. Neat, Leon K. Harding, Patrick Morrissey, Seth R. Meeker, Richard T. Demers "Smartphone scene generator for efficient characterization of visible imaging detectors", Proc. SPIE 10709, High Energy, Optical, and Infrared Detectors for Astronomy VIII, 107092R (6 July 2018); doi: 10.1117/12.2312335;

Harding, et al. "Technology Advancement of the CCD201-20 EMCCD for the WFIRST-AFTA Coronagraph Instrument: sensor characterization and radiation damage." Journal of Astronomical Telescopes, Instruments, and Systems 2.1 (2016): 011007-011007.

PROJECTS

Fish Tank Temperature Regulator Summer 2018

- Developed system with an Arduino, digital thermometers, fans, and a water heater to maintain a constant temperature for a 10 gallon fish tank

- System is currently being used and fish are alive and well

Crowd Size Detector Summer 2018

- Developed a platform using Tensor-Flow's object detection API to monitor the number of people in a variety of public locations

UCSC Hackathon Winter 2016

- Wrote a Monte Carlo simulation to help predict the demand for each of the Computer Science Classes offered at UCSC

- The program was created to help reduce the number of people unable to get into Computer Science classes

Honors and Awards

UCSC Deans list Fall 2015 - Winter 2019

- GPA was in the top 15% of Jack Baskin School of Engineering Students

La Caňada Math Team Scholarship Winner Spring 2015

- Demonstrated leadership and passion in the field of mathematics

La Caňada Thursday Club Scholarship Winner Spring 2015

- Demonstrated academic success, enthusiasm for community service and potential to succeed and make a difference in the world

Crescenta-Caňada Lions Club Scholarship Winner Spring 2015

- Demonstrated academic success and entrepreneurial talent

GITHUB

http://github.com/Leo-Neat

REFERENCES

Available upon request.