

# VAISHAAL SHANKAR

## EDUCATION

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**University of California, Berkeley** Current  
*Doctor of Philosophy*  
*Computer Science*

**University of California, Berkeley** 2011 - 2015  
*Bachelor of Science*  
*B.S Electrical Engineering & Computer Science*  
*Honors & Deans List*

## WORK EXPERIENCE

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**AmpLab, UC Berkeley** Fall 2015 - Present  
*Research Assistant*  
Working under Professor Ben Recht.

**University of California, Berkeley** Fall 2016  
*CS289 Graduate Student Instructor*  
Lead weekly recitation session and hold office hours

**Apple** Summer 2015  
*Software Engineering Intern*  
Improved low level pseudo random number and time management APIs within xnu kernel and darwin userspace.

**University of California, Berkeley** Fall 2014  
*CS162 Head Teaching Assistant*  
Reorganized CS162 course material to revolve around a x86 based kernel (Pintos) and low level systems programming. Wrote autograder, designed projects & homeworks and led discussion sections for Operating Systems course.

**Secure Computing Research, UC Berkeley** Fall 2014 - Fall 2015  
*Research Assistant*  
Worked on dimensionality reduction using iterative hard thresholding to run more expensive non linear classifiers for malware detection pipeline. Worked on reputation analysis for various antivirus vendors, for better ground truth labels.

**Video & Image Processing Lab, UC Berkeley** Spring 2014 - Spring 2015  
*Research Assistant*  
Designed and implemented supervised learning techniques to improve ground level image localization with aid from overhead satellite data.

**University of California, Berkeley** Fall 2013 - Spring 2014  
*CS162/CS61A Teaching Assistant*  
Led discussion section and labs, held office hours and review sessions for students in the Intro to Computer Science course and the Operating Systems course.

**Facebook** Summer 2013  
*Software Engineering Intern*  
Wrote a run time type profiler for Facebook's HipHop PHP Just in Time Compiler. Added instructions to compiler to log function input and output types for functions to identify and tag "statically typed" functions.

## PUBLICATIONS

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Morrow, A. \*, **Shankar, V\***, Petersohn, D., Yosef, N., Recht, B., Joseph, A.D (2016, December). Convolutional Kitchen Sinks for Transcription Factor Binding Site Prediction. NIPS Workshop on Machine Learning in Computational Biology (In submission)

Jonas, E., **Shankar, V.**, Bobra, M. and B. Recht (2016 December). Flare Prediction Using Photospheric and Coronal Image Data. AGU Fall Meeting

**Shankar, V.**, Zhang, J., Chen, J., Dinh, C., Clements, M., Zakhor, A. (2016, February). Approximate Subgraph Isomorphism for Image Localization. International Symposium on Electronic Imaging

**Shankar, V.**, Culler, D. (2015, March). A Modern Student Experience in Systems Programming. In Proceedings of the Second (2015) ACM Conference on Learning@ Scale (pp. 233-236). ACM.

Kantchelian, A., Tschantz, M. C., Afroz, S., Miller, B., **Shankar, V.**, Bachwani, V., Bachwani, R., Joseph, A.D. Tygar, J. D. (2015, October). Better malware ground truth: Techniques for weighting anti-virus vendor labels. In Proceedings of the Eighth ACM Workshop on Artificial Intelligence and Security (pp. 45-56). ACM.

Miller, B., Kantchelian, A., Tschantz, M.C., Afroz, S., Bahwani, R., Faizullahoy, R., Huang, L., **Shankar, V.**, Wu, T., Yiu, G., Joseph, A.D. Tygar, J. D (2016 July). Reviewer Integration and Performance Measurement for Malware Detection. 13th Conference on Detection of Intrusions and Malware Vulnerability Assessment

## PROJECTS

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### **Eth194+**

An ethernet driver for an NE2000 based ethernet card with port mapped IO, dma, and intelligent flow control. Written for Linux Kernel

### **Lpfs**

An encrypted log structured, copy on write file system with snapshots, journaling and segment cleaning for the Linux Kernel

### **Pseudopython**

A compiler for “pseudopython” a statically typed language with very close resemblance to python but has type inference and uses LLVM for code generation

### **Inventory**

An intelligent backpack that keeps track of what items are inside it with the aid of an android application. 1st place Pennapps 2013

### **Pythonscript**

A compiler that converts python code into javascript to run in browser. Has support for function definitions, custom classes and operators. 1st place Battle of Bay 2012

## TECHINICAL SKILLS

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### **Programming Languages**

C, C++, Python, Scala, Javascript, Java, L<sup>A</sup>T<sub>E</sub>X

### **Tools**

Spark, Theano, Caffe, Hadoop, Qgis, Gdal, Adt

### **Coursework**

High Dimensional Statistics, Convex Optimization, Probability Theory  
Theoretical Statistics, Statistical Learning Theory, Machine Learning,  
Linear Algebra, Real Analysis, Quantum Mechanics  
Digital Image Processing, Advanced Operating Systems, Compilers

## AWARDS AND HONORS

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**Eta Kappa Nu Member**

**James H. Eaton Memorial Scholarship**

**Deans List**

**Graduated with Honors**



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