

VAISHAAL SHANKAR

EDUCATION

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

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

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

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

Programming Languages

C, C++, Python, Scala, Javascript, Java, L^AT_EX

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

Eta Kappa Nu Member

James H. Eaton Memorial Scholarship

Deans List

Graduated with Honors



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