Sharad Vikram

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Education

University of California at San Diego
2014 - 2019 (expected): Ph.D. in Computer Science (Machine Learning)
GPA: 3.86
Relevant Coursework: Graphical Models, Topics in Learning Theory, Machine Learning, Convex Optimization

University of California at Berkeley
2011 - 2014: B.S. in Electrical Engineering and Computer Science
GPA: 3.74 Major GPA: 3.8
Regents Scholar
Relevant Coursework: Discrete Math and Probability, Artificial Intelligence, Machine Learning, Algorithms, Computer Vision, Statistical Learning Theory

Torrey Pines High School
2007 - 2011
Weighted GPA: 4.5

Publications

Sharad Vikram, Sanjoy Dasgupta: **Interactive Bayesian Hierarchical Clustering.** Pre-print (arxiv).

Zachary Lipton, Sharad Vikram, Julian Mcauley: **Capturing Meaning in Product Reviews with Character-Level Generative Text Models**. Pre-print (arxiv).

Sharad Vikram, Matthew D Rasmussen, Eric A Evans, Imran S Haque: **SSCM: A method to analyze and predict the pathogenicity of sequence variants.** Pre-print (bioRxiv).

Sharad Vikram, Sanjoy Dasgupta: **Interactive Hierarchical Clustering using Bayesian Nonparametrics.** NIPS 2015 Workshop - Bayesian Nonparametrics: The next generation.

Sharad Vikram, Lei Li, Stuart J. Russell: **Writing and sketching in the air, recognizing and controlling on the fly.** CHI Extended Abstracts 2013: 1179-1184

Research

University of California at San Diego - Professor Sanjoy Dasgupta (advisor)

2014 - present: Currently working on interactive Bayesian algorithms (incorporating user feedback into probability distributions) and probabilistic algorithms for sensor calibration. Also working on various deep learning projects. Currently author and maintainer of open

source deep learning library (deepx).

University of California at Berkeley - Professor Stuart Russell

2012 - 2013: Worked with Lei Li on gesture recognition using the dynamic time warping algorithm. Extended existing SOTA dynamic time warping similarity search techniques to multiple dimensions, designed and implemented a gesture recognition system. Extended abstract accepted into CHI 2013.

2013 - present: Worked with David Moore on Gaussian process regression for earthquake and nuclear test detection. Working on adding non-Gaussian noise models to the existing observation model. Learned various approximate inference techniques such as Laplace approximation and expectation propagation.

Teaching

University of California at San Diego

CSE 250B - Machine Learning

- *Spring 2016* (Sanjoy Dasgupta) - Teaching assistant; hold weekly discussion and office hours. Write discussion worksheets and grade exams/homework. (See www.sharadvikram.com/#/teaching for details.)

University of California at Berkeley

CS 189 - Machine Learning

- *Spring 2014* (Jitendra Malik and Alyosha Efros) - Undergraduate student instructor; leading and teaching two discussion sections; contributing to weekly discussion worksheets; helped write a midterm; holding weekly office hours

CS 61A - Structure and Interpretation of Computer Programming

- *Fall 2012* (John Denero) - Reader: Graded homework, projects, tests; organized and helped develop a code review systems for students
- *Spring 2013* (Amir Kamil) - Undergraduate Student Instructor: led and taught two discussion sections and two labs. Wrote worksheets for students and held weekly office hours; proctored and graded tests
- *Fall 2013* (John Denero) - Undergraduate Student Instructor: led and taught two discussion sections and two labs. Wrote worksheets for students and held weekly office hours; proctored and graded tests

Experience

Software Engineering Intern - Counsyl (Summer 2014)

- Designed and implemented an algorithm to predict the pathogenicity mutations in the genome. Used a generative statistical clustering model to model mutations and used EM to infer parameters.

Software Engineering Intern - Facebook (Summer 2013)

- Worked on Facebook Messenger for Android.

- Worked on various logging services on Facebook Chat backend.
- Wrote a data pipeline (Hive) to aggregate impression data.
- Ported a backend service from one machine learning model to a more accurate model.
- Optimized evaluation performance of machine learning algorithms used in various services in Facebook.

Software Engineering Intern - RewardMe (Summer 2012)

- Worked on Android Bluetooth Serial communication with an Android app.
- Worked with Google Maps API to create a realtime monitoring tool.
- Integrated Cardspring API with a JBoss/MySQL backend.
- Wrote an iOS credit card reader app.

Software Engineering Intern - Cubic Transportation Systems (Summer 2011)

- Designed and implemented a UI in GWT and ExtGWT for a Java application monitoring tool.
- Used DAO to access and manipulate a Derby database.
- Implemented a mobile version of the UI in ExtJS. Used Ant build scripts.

Software Engineering Intern - San Diego Supercomputer Center (Summer 2010)

- Worked in the San Diego Supercomputer Center under Dr. Amarnath Gupta; used GWT to design a search interface that would query a large neuroscience database; interface was unique in that it would back-check queries for contextual errors.

Activities/Projects

- Member of **HKN** (EECS Honors Society)
- **Won Greylock Hackfest (7/2012)** with toaster.js, a platform for controlling electronic devices wirelessly (internet)
- **Top 5 SDHacks (10/2015)** with tunemap, a music graph in the browser built using Latent Dirichlet Allocation.
- **Won Big Hack II (5/2012)** - used accelerometer data from Android phone to remotely control a blimp
- **Won Big Hack I (4/2012)** with Orange Cube, a capacitive sensing tool using arduinos, paper, and foil that can remotely control computers with gestures and control the mouse with trackpad functionality (Node.js, Python)
- **Won the Code4Cal Hackathon (3/2012)** with BroBooks, a social textbook exchange website. HTML, Javascript, and CSS front-end with Node.js/MySQL backend, also utilized Facebook integration.
- **Placed 2nd in Facebook Battle of the Bay Hackathon (10/2011)** - controlled a mouse and wrote words (handwriting recognition) on a computer by moving fingers in the air with IR detection using a Wii Remote
- **Placed 3rd in Facebook Battle of the Bay Hackathon II (10/2012)** - built augmented reality glasses with hand gesture recognition using Raspberry Pi
- An ex-officer and co-founder of **Hackers At Berkeley** (http://www.hackersatberkeley.com)