Sharad Vikram

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Education

Torrey Pines High School
2007-2011
Weighted GPA: 4.5

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

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

Research

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

2014 - present: Currently working on interactive hierarchical clustering using Bayesian nonparametrics.

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 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

Publications

- Sharad Vikram, Matthew D Rasmussen, Eric A Evans, Imran S Haque: SSCM: A method to analyze and predict the pathogenicity of sequence variants
  - http://biorxiv.org/content/early/2015/06/26/021527
- 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
  - http://www.cs.cmu.edu/~leili/pubs/vikram-chi2013-handwriting.pdf

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. Preprint:

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 officer and co-founder of **Hackers At Berkeley** (http://www.hackersatberkeley.com)