

Dinesh Majeti

Email: dmajeti@uh.edu

Phone: (+1) 832-769-6701

Education

Course	Institute	CGPA	Year
Ph.D. (Computer Science)	University of Houston, Texas.	3.8/4.00	2013-2018 (Aug)
M. Tech (Computer Science)	Sri Sathya Sai Institute of Higher Learning, India.	8.8/10.00	2011-2013
M.Sc (Mathematics with specialization in Computer Science)	Sri Sathya Sai Institute of Higher Learning, India.	5.00/5.00	2009-2011
B.Sc Honors (Mathematics)	Sri Sathya Sai University, India	4.97/5.00	2006-2009

Work Experience

- **Research Assistant, Department of Computer Science, University of Houston, Texas, US (January 2018 – Current)**
 - Study the impact of collaboration in cross-disciplinary sciences like Genomics and Brain Science
 - Scalable and Compact visualization of Academic Careers
- **Teaching Assistant, Department of Computer Science, University of Houston, Texas, US (August 2017 – December 2017)**
 - Instructor and grader COSC 6355/4355 Ubiquitous Computing Fall 2017
- **Software Engineering Intern, VoltDB, Bedford, Massachusetts, US (May 2017 – August 2017)**
 - Worked on [improving SQL Execution](#) by adding support for multi-statement stored procedures and multiple-file batch processing for VoltDB.
- **Teaching Assistant, Department of Computer Science, University of Houston, Texas, US (August 2016 – Current)**
 - Instructor and grader for COSC 6323 Statistical Methods in Research Spring 2017
 - Instructor and grader COSC 6355/4355 Ubiquitous Computing Fall 2016
 - Course Builder for IDNS 6391 Ethics in Science Fall 2016
- **Research Intern, Kellogg School of Management, Northwestern University, Evanston, Illinois, US (June 2016 – August 2016)**
 - Populate [ScholarPlot](#)(SP), a team science tool, with university department level data that would permit users of SP to evaluate scientific departments as the unit of analysis. Also made improvements in the interface that make it more useful for evaluating individual scientists and departments.
- **Participant, Stanford Scholar (March 2016 – March 2017)**
 - An initiative by Stanford researchers to make research more accessible and to build courses - <https://scholar.stanford.edu/#!/page/home>.
 - Developed course(s) like Introduction to Algorithms.
- **Researcher, Crowdsourcing Project - Daemo (January 2016 – March 2017)**
 - A research project initiated by Prof. Michael Bernstein at Stanford HCI group with collaboration of world wide researchers - <http://hci.stanford.edu/>
 - 500+ international researchers involved in this project.
 - The project is a complete design, implementation, launch, and evaluation of a new crowdsourcing platform - [Daemo](#).
 - Involved in evaluation, data analysis and paper writing.

- **Teaching Assistant, Department of Computer Science, University of Houston, Texas, US (August 2014 – May 2016)**
 - Instructed and graded COSC 6397 Statistical Methods in Research Spring 2015, Spring 2016
 - Assessed and guided COSC 3380 Design of Databases Spring 2016
 - Instructed and graded COSC 6355/4355 Ubiquitous Computing Fall 2014, Fall 2015
- **Research Intern, Kellogg School of Management, Northwestern University, Evanston, Illinois, US (June 2015 - August 2015)**
 - Program into the platform algorithms that convert statistical and deterministic models into program features based on citation data; add comparative analysis features; and improve the back-end data intake features from Google Scholar.
- **Research Assistant, Computational Physiology Lab, University of Houston, (August 2013 – August 2014)**
 - Design and develop [ScholarPlot](#), an iPhone application called using Objective-C, PHP and MySQL.
 - Design and develop a web application, <http://www.scholarplot.com/>, to interface scientific careers.
 - Visualize your research accomplishments or those of others at a glance! This application plots a scholar's publications along with her/his NSF and NIH funding in an insightful manner.
 - Detection and estimation of incline via Mobile application
 - Current crop of walking applications is usually accurate as long as one is on level ground. In cities with lot of hills, like San Francisco, the accuracy of these applications is very poor. In our pilot study, we use accelerometer embedded inside iPhone to compute the surface incline. This study has been published in CHI'15 conference under the title 'Using Accelerometer data to estimate surface incline and its walking app potential'.
 - Evaluation of Academic Performance of Scientists
 - Career quantification in academia is necessary to give promotions, raises and grants to faculty professors at universities. Services such as google scholar builds profile of a professor's research performance over the course of her/his career. In this project, we report analysis of professors at various universities, through their three academic career stages: pre-tenure, post tenure (associate professor years), and once they reach full professor. This work will put to test the status quo that a professor's quality and quantity of work improves as he advances through his academic career.
- **M.Tech Dissertation, Sri Sathya Sai Institute of Higher Learning, India (June 2012 – March 2013)**
 - Analytical and Numerical Approximations to Markov Random Field based Image Segmentation –
 - In stochastic image processing, the image data is usually modeled as a Markov random field (MRF) which can be characterized by the Gibbs distribution. The image segmentation problem is formulated as a Gaussian Mixture Model and MRF is used to incorporate spatial correlation between pixels of the image. We also propose a Bayesian Information Criterion (BIC) for Mean field approximation under variational Bayes to automatically estimate the number of segments in the image. This work was implemented in MATLAB and C++ using MATLAB's MEX interface. This work was partially supported by a Defence Research and Development Organization (DRDO) grant under Extramural Research and Intellectual Property rights.
- **M.Sc Dissertation, Sri Sathya Sai Institute of Higher Learning, India (November 2010 – March 2011)**
 - A study of Random Walks and its application to Image Segmentation –
 - In this dissertation, we have have studied random walks in one and two dimensions. We also deliberated upon the connection between Random Walks and Dirichlet problem. An Image Segmentation algorithm using random walks was implemented in MATLAB as part of this work.

Technical Skills

Programming Languages:	C, C++, Java, Working knowledge of Scala, Groovy, Ruby, Erlang, Clojure, Haskell.
Mobile Programming:	Objective-C and Swift for iOS.
Web Programming:	PHP, JavaScript, Express.js, Node.js, HTML, CSS, Bootstrap, Angular.js.
Parallel Programming:	CUDA, MPI, OpenMP.

Platforms/Technologies:	Hadoop, Spark, Unix Programming, Unix Network Programming, Multithreaded Programming, Web programming using C# and ASP.NET, Open source Web Technologies like Joomla.
Databases:	MySQL, Oracle 10g, DB2, MongoDB.
Tools:	XCode, Eclipse, R, MATLAB, RStudio, Gradle, SVN, Weka, IntelliJ, PerfSuite, Git, Valgrind, VisualStudio, Scilab, LaTeX.

Awards/Achievements

- First Place in PhD Showcase at University of Houston in May 2015
- International Texas Public Education Grant Award, July 2014 and January 2015
- Justice P N Bhagwati Gold Medal for excellence in Master of Technology (Computer Science) in 2013
- Consistent Academic Excellence Award for 2 consecutive years in 2012 and 2013
- Qualified for Junior Research Fellowship in University Grants Commission NET, India, 2012
- Qualified in Graduate Aptitude Training Examination in Computer Science, India, 2011.

Publications

- [1]. [Stanford Crowdsourcing Research Collective]. Designing A Constitution for a Self-Governing Crowdsourcing Marketplace. Collective Intelligence Conference 2017, New York, USA, June, 2017.
- [2]. [Stanford Crowdsourcing Research Collective]. The Daemo Crowdsourcing Marketplace. CSCW: ACM Conference on Computer-Supported Cooperative Work and Social Computing, Portland, Oregon, USA, February, 2017.
- [3]. [Stanford Crowdsourcing Research Collective]. Crowd Guilds: Worker-led Reputation and Feedback on Crowdsourcing Platform. CSCW: ACM Conference on Computer-Supported Cooperative Work and Social Computing, Portland, Oregon, USA, February, 2017.
- [4]. [Stanford Crowdsourcing Research Collective]. Boomerang: Rebounding the Consequences of Reputation Feedback On Crowdsourcing Platforms. UIST: ACM Symposium on User Interface Software Technology, Tokyo, Japan, October, 2016.
- [5]. KA Kwon, **D. Majeti**, B. Uzzi, I. Pavlidis. Scholar Plot: Visualizing Scientific Careers at a Glance. International Conference on Computational Social Science (IC²S²) 2016 Conference, Evanston, Illinois, USA, June, 2016.
- [6]. **D. Majeti**, S. Taamneh, M. Ugur, A. Khatri, and I. Pavlidis. Insights into Computer Science Academic Careers. Science of Team Science (SciTS) 2016 Conference, Phoenix, Arizona, USA, May, 2016.
- [7]. KA Kwon, **D. Majeti**, B. Uzzi, I. Pavlidis. Scholar Plot: A Compact and Scalable Visualization Method for Academic Careers. Science of Team Science (SciTS) 2016 Conference, Phoenix, Arizona, USA, May, 2016.
- [8]. **D. Majeti**, KA Kwon, P. Tsiamyrtzis, I. Pavlidis. Dissecting Scholarly Patterns in Biology and Computer Science. Science of Team Science (SciTS) 2015 Conference, Bethesda, Maryland, USA, June 2015.
- [9]. I. Uyanik, A. Khatri, **D. Majeti**, M. Ugur, D. Shastri, I. Pavlidis. Using Accelerometer Data to Estimate Surface Incline and Its Walking App Potential. CHI'15 Extended Abstracts on Human Factors in Computing Systems, Seoul, South Korea, April 2015.
- [10]. **D. Majeti**, A. Prakash, S. Balasubramanian, PK Baruah. Parallel Cosegmentation via Submodular Optimization on Anisotropic Diffusion. IEEE International Conference on High Performance Computing (HiPC - 2012), Student Research Symposium, Pune, India, December 2012.

Other Academic projects

Hadoop TF-IDF

- Computed the TF-IDF (Term Frequency and Inverse Document Frequency) for a large set of documents using Pydoop and PySpark frameworks. Also, determined synonyms for words by building a (word2vec) model with the features from the words.

SHRPAS – Communication Module

- I worked along side a team of undergraduate and graduate students to develop the communication portion of SHRPAS's Professional Development Platform. We allowed for users to manage their contacts, request chat sessions, and view recorded chat sessions. The website was developed with AngularJS, Jade, CSS, Node.js, Express, and MySQL. The chat functionality was accomplished with the OpenTok API. We used Agile Methodology for this full stack Web app development with TDD.

Weather App

- Pair project to develop a [console application](#) to obtain weather data for cities using Test Driven Development using JMock and JUnit in Java. The data was obtained from open weather API (<http://openweathermap.org/>) in JSON format.

Minesweeper Game

- Developed [Minesweeper game](#) in Groovy using Test Driven Development. The GUI was developed using the SwingBuilder library. This game was developed using Pair Programming.

URL parser

- Pair project which involved computing the number of links starting from a URL recursively in Groovy. This program was parallelized using threads, software transactional memory (STM) and actors using Groovy Parallel Systems (GPar) framework.

Bill and Melinda Gates Foundation: Records for Life

- The team and I developed an iOS application which parents could use to keep track of their children's vaccination records. The system allowed parents to log in and record, modify, and maintain the record of their children's vaccines. We worked alongside graphic designers who were also redesigning a hard copy immunization record.

iStepMore - Mobile application to motivate exercise

- In this modern age of technology, many people do not have the sufficient time and motivation for exercise. This leads to a lot of health problems in many people. To motivate people to keep fit, it is very apt to use modern technology and gadgets. One way to inspire people to exercise is to enable them to set goals and also kindle them with a spirit of competition. Currently there are many iPhone applications which compute the calories consumed by the user and also count the user's steps. But unlike these applications, this iPhone application enables the user to set targets and send notifications to the user's peers.

Parallel Co-segmentation

- In this work, a co-segmentation algorithm (CoSand) is parallelized and ported onto GPU. This work has been accepted as a paper for Student Research Symposium, International Conference on High Performance Computing (HIPC-2012). This work was partially supported by a NVIDIA grant under Professor partnership program and a DRDO grant under Extramural Research and Intellectual Property rights and the Extreme Science and Engineering Discovery Environment (XSEDE) of grant number OCI- 1053575.

Q learning in the PD World

- In this project, Q-learning is used for the Pick-Up Drop-Off (PD) World and experiments are conducted using various parameters and policies. The visualization for this project is done using Java Swing.

Unix Programming

- Implemented a shell with basic functionalities for the Unix Environment in C.

ASP.NET and C#

- A group project for the design and development of an Online Publication System.

Cool Compiler

- Implementation of lexical analyser and parser for an object oriented programming language called 'COOL'.

Network Programming

- A command-line implementation of a simple HTTP server.

Minix Operating System

- Implementation of a memory management scheme and a system call in Minix.

Coursework

Computer Science

Programming Languages, Software Design, Software Development Practices, Ubiquitous Computing, Software Engineering
Algorithms and Data Structures, Computer Organizations and Architecture, System Programming, Database Systems, Computer Networks
Machine Learning, Theory of Computation, Operating Systems, Design and Analysis of Algorithms, Programming for Performance*, Digital Image Processing, Distributed Systems, Object Oriented Analysis and Design, Parallel Processing, Compiler Design*, High Performance Computing with Accelerators*

*worked on supercomputers like NCSA Forge, SDSC Trestles, SDSC Gordon, PSC Blacklight, TACC Lonestar, TACC Longhorn and TACC Ranger for Lab Assignments

Mathematics

Real Analysis, Complex Analysis, Topology, Functional Analysis, Measure Theory, Differential Geometry, Advanced Algebra, Fuzzy Theory, Linear Algebra, Mathematical Logic
Boundary Value Problems, Theory of Ordinary Differential Equations, Techniques in Applied Mathematics, Mathematical Modelling
Theory of Probability, Theory of Statistics, Optimization Techniques
Numerical Analysis, Numerical Linear Algebra

Interdisciplinary Courses

Ethics in Science, Advanced Science Ethics

Online Courses

Coursera Online Courses:

- **Stanford** - Automata, Design and Analysis of Algorithms Part 1, Probabilistic Graphical Models.
- HTML, CSS and JavaScript, Front-End Web UI Frameworks and Tools, Contagious: How Things Catch On, Programming Mobile Applications for Android Handheld Systems: Part 1

Mongo DB University Course:

- Implementation of Mongo DB backend for a blog web application.

Code School Courses:

- Real-time Web with Node.js, Building Blocks of Express.js, jQuery, SVG, PHP, Flexbox, Web Animation, ES2015

Data Camp

- Plotly and R

Research Mentor

- Mentor for a team of 4 graduate students from University of Houston, Clear Lake, for their Masters [Capstone Project](#) in **Fall 2016** for animation of scientific careers.
- Mentor for 2 students from University of Texas, Austin and University of Houston, Main Campus in **Summer 2016** as part of the University of Houston Summer Research Experience for Undergraduates (REU) program for ScholarPlot tool data analysis.
- Mentor for a High School student for **Summer 2016** in introduction to research and statistics.

Extra Curricular Activities

- **ACM CHI** Student Volunteer for Human Factors in Computing Systems CHI' 2016.
- Volunteer as 'Peer advisor' for the **International Student and Scholar Services (ISSSO)** at the University of Houston for Spring 2016 and Spring 2017.
- **Sports & Cultural:** Actively participated and won in Table Tennis, Shuttle Badminton, Elocution, Orchestra and Dramatics.
- **Grama Seva:** Participated in [Grama Seva](#), the massive Sri Sathya Sai Village Service Program project to provide food and clothing to the needy in over 150 villages in Anantapur District of Andhra Pradesh, India, 2004-12.
- **Self-Reliance:** Member of Hostel Altar team, to organize various cultural programmes/festivals in hostel. Member of hostel kitchen with responsibility in maintaining accounts, bills and inventory management.

Technical Presentations

- Presented a paper and poster at The Science of Team Science Conference, SciTS 2016, Phoenix, AZ, USA, May 2016.
- Presented a poster at The Science of Team Science Conference, SciTS 2015, Bethesda, MD, USA, June 2015.
- Presented a poster at CHI EA '15 Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems in Seoul, South Korea, April 2015.
- Presented a paper at the IEEE International Conference on High Performance Computing, Student Research Symposium, Pune, India, December 2012.

Workshops attended

- Workshop on NVIDIA CUDA, A hands on Experience by Prof P. (Saday) Sadayappan, Ohio State University, USA, 2011.
- International Workshop on Scientific Computing, A Journey from Theory to Practice, held at the Department of Mathematics and Computer Science, Sri Sathya Sai Institute of Higher Learning, India, 2010.

Languages

English, Telugu