

Somay Jain

Fields of Interest

My interests include Computer Vision, Graphics, Machine Learning, High Performance Computing and Open Source Software Development.

Education

- 2015–2017 **Master of Science, Computer Science**, University of Maryland, College Park.
(expected) Relevant Coursework: Statistical Pattern Recognition, Computer Processing of Pictorial Information
- 2011–2015 **Bachelor of Technology (Honours), Computer Science and Engineering**, International Institute of Information Technology Hyderabad, **CGPA–9.05/10**.
- Received Honours by Specialization in Computer Graphics and Vision
 - Awarded Dean's Merit List-I (top 5% of the batch) for Academic Excellence for 2 consecutive years 2011-2012 and 2012-2013.
- Relevant Coursework: Algorithms, Data Structures, Computer Vision, Machine Learning

Publications

Piyush Bansal, **Somay Jain**, Vasudeva Varma, '*Towards Semantic Retrieval of Hashtags in Microblogs*', in International World Wide Web Conference (WWW) 2015.

Somay Jain, Nitish Tripathi, P. J. Narayanan, '*Interactive Simulation of Generalised Newtonian Fluids using GPUs*', in Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP) 2014.

Work Experience

- Summer '15 **Software Development Intern**, OPENDAYLIGHT, California.
- Worked on Jenkins Job Builder (JJB) to improve it's plugins support.
 - Made every option in the OpenDaylight Jenkins instance configurable by JJB.
 - Amongst the top 10 contributors of the JJB project.
- Spring '15 **Research Assistant**, SOFTWARE ENGINEERING RESEARCH CENTER, IIIT Hyderabad.
- Worked on devising methods for distributed model checking using SPIN under Prof. Suresh Purini.
- Summer '14 **Software Developer**, GOOGLE SUMMER OF CODE.
- Led the Sahana Sunflower Project, a community management tool used to manage tasks and track Sahana volunteers, projects and deployments.
 - Amongst the top 5 contributors of the Sahana Eden project.
- Spring '14 **Software Development Intern**, SAHANA SOFTWARE FOUNDATION.
- Helped improve Sahana Eden by fixing bugs and testing it's functionality using Selenium.
- Nov–Jan'14 **Mentor**, GOOGLE CODE-IN, Sahana Eden.
- Mentored pre-university students to introduce them to open source development.
 - Responsible for making new coding tasks for students.
- Summer '13 **Software Developer**, GOOGLE SUMMER OF CODE.
- Developed an Automatic Testing Framework and a Continuous Integration Sever for Sahana Eden which tests the fast moving code-base and reports daily via email.
 - Worked as a bug marshal, reporting and fixing bugs by regularly monitoring the test results.

- 2013–2014 **Coordinator**, OPEN SOURCE DEVELOPMENT GROUP, IIIT-Hyderabad.
- Responsible for organizing hackathons and helping students get started with open source development.

Achievements

- ACM-ICPC** **Ranked 22** in the ACM International Collegiate Programming Contest Amritapuri Regional, in the year 2012-2013. Team : DeepThought.
- Ranked 6** in the ACM-ICPC Asia-Kharagpur Site First Round Online Contest 2012.
- GSoC** Selected as a **Student Software Developer** for **Google Summer of Code 2013 and 2014**.
- Appathon** Stood **First** in the appathon *code.fun.do* organized by **Microsoft India Development Center**. Amongst the few selected for Development Phase of the **Intel RealSense App Challenge 2014**.

Projects

Fluid Simulations of Generalized Fluids

- Description Implemented a novel method to simulate generalized Newtonian fluids using Lattice Boltzmann Method on single and multiple GPUs. Achieved manifold rise in performance as compared to earlier single core implementations.
- Technologies* : C++, CUDA, OpenGL

Visualization of Voxel Data on Monoscopic, Stereoscopic Tiled Display

- Organisation DEFENSE RESEARCH AND DEVELOPMENT ORGANISATION (DRDO)
- Description Made a software to visualize voxel data and polygon models on a 12-panel tiled display connected to 6 distributed compute nodes of a cluster. The visualization includes monoscopic and stereoscopic displays.
- Technologies* : C++, QT, OpenGL

Action based classification of short videos

- Description Classification of short videos (GIFs) by learning mid-level image patches. Used a combination of k-means and exemplar-SVM to perform discriminative clustering of the image patches.
- Technologies* : Python (scikit-learn)

Parallel Ear Decomposition for Graphs

- Description Implemented an efficient GPGPU algorithm for finding the ear decomposition of a graph for NVIDIA Kepler with CUDA.
- Technologies* : C++, CUDA

Minor Projects

- **Face Recognition**. A classifier to recognize faces from Yale, CMU-PIE datasets using Eigenfaces and SVM.
- **Digit Classifier**. A classifier to recognize the digit from the image of handwritten digits.
- **3D Game**. Made a 3-D first person adventure game using OpenGL in C++.
- **Interactive Shell**. A shell to execute commands including redirection and pipelining using C POSIX library.
- **Postnoon Database**. Designed and developed a Relational Database for Postnoon, Hyderabad.

Technical Skills

- Languages C, C++, PYTHON, BASH, JAVA, MATLAB
- APIs OpenGL, OpenSceneGraph, OpenCV
- HPC High Performance Computing : NVIDIA-CUDA
- OS Linux, MacOS X, Windows XP/Vista/7
- Web HTML5, CSS, Javascript, Web2py