

# Srinath Ravichandran

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CONTACT INFORMATION Room No:252, NBH Phone: (+91) 9573708620  
IIIT - Hyderabad E-mail: [srinath.ravichandran@research.iiit.ac.in](mailto:srinath.ravichandran@research.iiit.ac.in)  
Gachibowli - 500032 WWW: <http://researchweb.iiit.ac.in/~srinath.ravichandran>  
Andhra Pradesh, India

RESEARCH INTERESTS Ray Tracing, Light Transport Algorithms, Physically Based Rendering, Real Time Rendering, GPGPU Computing

EDUCATION **IIIT - Hyderabad**, India

MS by Research, Computer Science, August 2011 (expected graduation date: July 2015)

- Thesis Topic: “GPU Algorithms for Ray Tracing and Global Illumination”
- Advisor: [Dr.P.J.Narayanan](#)
- GPA: 9.17/10

**Government College of Technology**, Coimbatore, India

Bachelor of Engineering, Computer Science, May 2009

- First Class with Distinction
- GPA: 8.65/10

WORK EXPERIENCE **Google Summer of Code 2014**

*Student Developer*

**May, 2014 - August, 2014**

Added curve rendering support for the 'appleseed' open source production renderer. This will be used to render fur/hair in a production environment.

**Center For Visual Information Technology(CVIT)**, IIIT - Hyderabad, India

*Graduate Research Assistant*

**August, 2011 - Present**

Worked in the research areas of Computer Graphics and High Performance Computing as a part of MS by Research programme.

**Oracle India Pvt Ltd**, Bangalore, India

*Quality Assurance Engineer*

**Jan, 2010 - July, 2011**

Worked in the Installation and Testing Services team and Functional Quality Assurance team of the JDEdwards EnterpriseOne Tools Division.

PUBLICATIONS **Srinath Ravichandran** and P.J.Narayanan. *Parallel Divide and Conquer Ray Tracing*. Siggraph Asia 2013 Technical Briefs.

RESEARCH PROJECTS **GPU Algorithms for Light Transport with Complex Materials** **Summer 2014**

This research work involves understanding of how the performance of bidirectional light transport algorithms in the presence of complex shading/materials are related to GPU architectures. This work is aimed at formulating efficient software solutions that run at optimal performance on GPUs.

## **Divide and Conquer Ray Tracing on the GPU**

**Summer 2013**

This was a research project that was aimed at performing ray tracing on the GPU without constructing any explicit acceleration data structure. Construction of an implicit acceleration structure and tracing of rays was done using a parallel divide and conquer framework. A paper on this work was presented at Siggraph Asia 2013.

### **COURSE PROJECTS**

## **Comparitive Study about Van Emde Boas Trees and FAST Trees**

**Monsoon 2012**

This was a Parallel Programming course project aimed at understanding Van Emde Boas Trees and the newer FAST(Fast Architecture Sensitive Tree). The work involved implementing and comparing their cache and memory access performance across various data sizes on different generations of CPUs.

## **Image Search Engine**

**Summer 2012**

This was a Computer Vision course project aimed at employing computer vision and machine learning techniques to develop an image search engine. Image search/recognition was performed using the Bag of Words model, Support Vector Machines (SVM) model and also using Artificial Neural Networks. The document vectors/feature vectors used in the models for searching and recognition were obtained using SIFT, SURF, GIST and other similar descriptor yielding procedures. The main part of the project dealt with understanding how the different models worked for different feature vectors used and the efficiency of the search in terms of relevance.

## **Panorama Stitcher**

**Summer 2012**

This was a Computer Vision course project aimed at creating an application that stitches a set of images together to form a panorama. SIFT features were extracted from each image and were used to compute the homography matrices between each pair of images. The final mosaic image was computed from the estimated matrices. OpenCV was used.

## **Review Summary System**

**Monsoon 2011**

This was a Cloud Computing course project that involved developing a summary engine for product reviews from web. The engine was designed to identify features of products automatically from reviews and populating a feature database. The system was also capable of identifying the polarity of reviews for various product features detected. The system was designed to be scalable over a distributed framework. Hadoop, Stanford Parser, REST API and NoSQL database were used.

### **GRADUATE COURSE WORK**

Digital Image Processing  
Statistical Methods in AI  
Cloud Computing  
Concurrent Data Structures  
Computer Vision  
Parallel Programming

### **TECHNICAL SKILLS**

Programming: C, C++, Java, CUDA, Python, Matlab, Shell Scripting  
APIs: OpenGL, DirectX, OpenCV, OpenMP  
IDEs: Visual Studio 2012, Eclipse, NVIDIA Parallel Nsight  
3D Modelling Tools: Blender, Maya 2013  
Operating Systems: Unix/Linux, Windows.