Sriram Kashyap M S **08305028**
Computer Science & Engineering **M.Tech.**
Indian Institute of Technology, Bombay **Male**
DOB: 07-12-1986

Examination	University	Institute	Year	CPI / %
Post Graduation	IIT Bombay	IIT Bombay	2010	9.30
Undergraduate Specialization: Computer Science & Engineering				
Graduation	Visvesvaraya Technological University	M.S Ramaiah Institute of Technology	2008	79.00
Intermediate/+2	Karnataka Pre-University Board	MES College	2004	88.00
Matriculation	Karnataka Secondary Education Board	Sri Vani Education Center	2002	95.70

Areas of interest: Computer Graphics, Parallel Processing, Machine Learning, Computer Vision

Current Projects:

1. **Real-Time Ray Tracing** (under Prof. Sharat Chandran, IIT Bombay)
   - Ray tracing is a photo-realistic image generation technique used in movies and CAD applications
   - Compute and memory intensive technique, usually processed off-line, on Render Farms.
   - The project involves the development of a *Real-Time Ray Tracing* solution that runs on *commodity graphics hardware*, based on the CUDA Parallel Framework.
   - Key challenges involve working under *memory constraints*, designing *cache friendly algorithms* and managing resources between **thousands of threads** executing in parallel.

2. **Photon Mapping for Diffraction** (in collaboration with Prof. Ramesh Raskar, **MIT Media Lab**)
   - Simulating light diffraction using the Augmented Light-Field theory developed at MIT Media Lab.
   - The project involves extension of this theory for **seamless integration** with existing rendering platforms, and development of a **fast, parallelized** diffraction simulator on GPUs.
   - Major challenges include translating the theory to a real world application and overcoming memory requirements of the order of **Tera bytes**.

Achievements:

1. **Ranked 6th** out of 102 students from M.Tech, CSE, IIT Bombay [2009]
2. **Best Performer Award** from the Dept of CSE, MSRIT [2008]

Positions of responsibility:

1. **Chairman of MSRIT Linux Association, Bangalore** [2007-08]
   - Organized Mukthi 7.04 and Mukthi 8.03, the annual FOSS events at MSRIT
   - Organized guest lectures from eminent FOSS evangelists and contributors
   - Conducted Linux Awareness Workshops for undergraduate students
2. **Teaching Assistant, IIT Bombay** [2008-09]
   - Computer Programming and Utilization. (under Prof. Abhiram Ranade)
   - Artificial Intelligence (under Prof. Pushpak Bhattacharyya)
   - Software Lab (under Prof. G Sivakumar)
3. **Event organizer for Aavishkaar 07 the IEEE fest at MSRIT** [2007]
   - Conducted a C++ Programming Contest
   - Designed posters and other publicity material for the event

Technical Skills:

- Programming: C, C++, CUDA, Java, Visual Basic, Python
- Scripting: Shell, VBA
- SCM: Subversion, git

Key Projects:

1. **B.E Project: Multi-view Projective 3D reconstruction** (C++, Win32) [2008]
   - Designed and implemented a silhouette based 3D reconstruction system.
   - Developed a data visualization tool to render 3D Volume Data.

2. **Camera calibration for 3D data acquisition** (C++, Shell Scripts) [2009]
   - Designed an algorithm to locate a known pattern in photographs with perspective distortion.
   - Developed a shell script driven tool chain to automate the process of 3D Data Acquisition.

3. **GPU accelerated GIMP Plug-in** (C++, OpenGL, GTK) [2008]
   - Designed and implemented a programming interface for accelerating image processing operations in GIMP (a FOSS alternative to Photoshop), by offloading processing to the graphics card.
   - Observed up to 10x Speed-Up for operations like Gaussian blur on 8 Megapixel images.

4. **Real-Time Adaptive Displacement Mapping** (C++, OpenGL, SDL) [2009]
   - Implemented a real-time, adaptive, memory efficient displacement mapping technique which selectively amplifies 3D geometry in high curvature regions, using OpenGL mesh instantiation.
   - Encapsulated the low level functionality of OpenGL (a C library) in C++ convenience classes.

5. **Image Based Relighting using Polynomial Texture Maps** (Java) [2008]
   - Developed a application where users can change lighting conditions in photographs, by extracting lighting cues from a sequence of photographs.
   - Implemented a fast image class in Java to provide direct access to pixel data in an image.

Other Projects:

1. Solving the Infinite Periodic Tiling problem using genetic algorithms and A* search. [2008]
2. Active Learning extensions to Naïve Bayes Classifiers and Decision Trees. [2008]
3. Soft body physics simulator (2D) using an Order 4 Runge Kutta Solver. [2008]
4. Interactive water height-field simulation using Cellular Automata [2007]
5. Application Partitioning in Multi-player games (at Satyam Applied Research Group). [2007]

Masters level courses:

Artificial Intelligence, Data Mining, Graphical Models and Structured Learning, Image Processing, Advanced Computer Graphics, Program Analysis, Algorithms and Complexity, Computational Biology