

Siddhartha Saha

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Education Master of Science, Computer Science and Engineering 2003-2006
University of California, San Diego, CA.

Bachelor of Technology, Computer Science and Engineering 1998-2002
Indian Institute of Technology, Kanpur, Uttar Pradesh, India

Theoretical and Technical Expertise

- Algorithms, Networking, Databases, Operating System, Compilers
- C, C++, Java, Perl, Basic, Visual Basic, Visual C++, PHP, JavaScript, Ruby, SQL
- Database oriented programming, ORM, MFC, Linux Kernel Modules, OpenGL, DirectX, Network, Multi threaded programming, web development
- Computer graphics, Ray Tracing, 3D modeling, Game design, Network simulation

Work Experience

Software Development Engineer, Google Inc. 05/10 - Present

- Currently working as a software engineer at Google.

Software Development Engineer, Microsoft Corporation, Redmond, WA 01/09 - 05/10

- Developer in Windows Mobile/Windows Phone

Software Development Engineer, Amazon.com, Seattle, WA.

- Member of the Post Order Care team, which handles third party sellers order notification, order management and payment information management. 07/06 - 01/09
- Manage Your Orders: This is the most high traffic area in Amazon.com website in the space of third party seller order management platform with over few million hits per day across the world. Completely re-wrote the entire front end with lots of feature enhancements - presenting a single interface to all different classes of merchants. Developed a new middle layer to hide the complex dependencies on multiple back end services from the front end, thus making it very easy to maintain. Also a primary contributor on the back end services and data model redesign overhaul that is currently under way.
- Merchant Payments Data Migration: As a project to move the 3rd party seller at Amazon to a new, more efficient platform, we needed to migrate their payments data for over 8 years to a completely new payments model in the new platform. I am one of the few core developers to handle this big task, including the validation of the migrated data.
- Settlement Report Generator: Lead designer and the developer in the ongoing project of writing a new version of the settlement report generator for sellers at Amazon, which will be a significantly improved version from the current one in many aspects, and will handle many shortcomings of the older design.

Software Development Engineer Intern, Amazon.com, Seattle, WA Summer, 2005

- As a summer intern, developed a backend service to store and retrieve ui level preferences for 3rd party sellers at Amazon.com. That service is still in use today, and serves thousands of requests per minute.

Wireless Networking Research Associate and Programmer, IIT Kanpur, India 2002-2003

- Long Distance Wireless Networking: Worked on a collaborative project with MIT Media Labs. The project focused on using 802.11 wireless networks on long distance network paths to provide wireless access to rural parts of India. Advisor: Dheeraj Sanghi

Research Experience Graduate Student and Research Associate, University of California, San Diego. 2003-2006

- *High Performance On-Chip Networking*: As a graduate student towards a doctoral degree, my research focused on on-chip networking and high performance on-chip routers. Advisor: Bill Lin.

Computer Graphics Research Intern, INRIA, Sophia-Antipolis, France. Summer, 2001

- Worked on surface reconstruction from 3D point clouds. Advisor: Frederic Cazals.

Publications

- Mayank M Kabra, Siddhartha Saha, Bill Lin, "Fast Buffer Memory with Deterministic Packet Departures", IEEE Hot Interconnects 2006
- Siddhartha Saha, Kamalika Chaudhuri, Dheeraj Sanghi, Pravin Bhagwat, "Location Determination of a Mobile Device using IEEE 802.11 Access Point Signals", IEEE WCNC 2003, New Orleans, Louisiana, USA, March 2003.
- Siddhartha Saha, Kamalika Chaudhuri, Dheeraj Sanghi, "An Extension of Scalable Global IP Anycasting for Load Balancing in the Internet". ICOIN 2003: 161-170.
- Siddhartha Saha, Kamalika Chaudhuri, R Maloo, Sanjeev K Aggarwal, "A Scheme for Automatic Data Layout in Distributed Memory Machines", IASTED Intl. Conference on Networks, Parallel and Distributed Processing and Application (NPDP 2002), Tsukuba, Japan, 2002.
- Kamalika Chaudhuri, Siddhartha Saha, Phalguni Gupta, "A Generalized Bitonic Sorting Technique for a Q-Dimensional Mesh Connected Computer" CIT 2002, Bhubaneswar, India. 2002.

Selected Projects

- **SMTSIM**: As an integrated part of the research based course work in the Advanced Computer Architecture course, worked on the SMTSIM package which is a cycle accurate simulator for SMT processors and extended it to evaluate the performance gain from our proposed modification of the cache of the processor.
- **Fracture Simulation**: As a course project in the Special Topics in Computer Science (CS 291) course, developed a system to simulate and render fracture of brittle materials following few recent research papers. The implementations, screenshots and videos are available in the academics section of my homepage.
- **Web Server**: As a course project in the Computer Communication Networks (CSE222A) developed an HTTP web server for both Linux and Windows. It had support for performance evaluation logging and access control over directories and files.
- **Weathering Simulation**: As a course project of CSE272: Advanced Appearance Modeling, worked on developing a shader using Kubelka-Munk and Torrent-Sparrow model to perform realistic rendering of natural decay events, such as rusting and weathering.
- **Ray Tracer**: Developed a ray tracer from scratch that is capable of Global Illumination with photon mapping, soft shadows, area/directional lights, anti-aliasing, bump-mapping texturing, Fresnel refraction, several acceleration structures including Adaptive Grids and Bounding Volume Hierarchy. Using this ray tracer rendered a scene that won the first prize in UCSD Computer Graphics Rendering Competition 2004.
- **3D Reconstruction**: As a course project, developed (using MATLAB) a system that can reconstruct 3D objects from multiple views of the object.
- **Character Recognition**: As a course project of a Computer Vision course, developed system to recognize Hindi (Devanagari) letters. It uses a back propagation neural network based approach as well as a decision tree approach.

Miscellaneous Achievements

- First position in the Rendering Competition of CSE168 at UCSD. (Spring 2004).
- Represented IIT Kanpur as the first team in the Asia Level ACM International Collegiate Programming Contest, Dec 2000 and secured 9th position.
- National Talent Scholarship by National Council for Educational Research and Training, 1996.
- 10th Rank in class X Board Exam, amongst more than 1 million candidates. (1996)