

Education

SCHOLASTIC ACHIEVEMENTS

- **Undergraduate Studies**
 - B. Tech (Hons.), Computer Science and Engineering
 - CGPA: **9.66/10** (at the end of 6th semester).
 - Department Rank **1** (out of **88** students)
- **Higher Secondary Examination – April 2009 (CISCE, New Delhi, India)**
 - Aggregate: **95.57%**
 - Mathematics: **100%**, Physics: **97%**, Chemistry: **99%**, Computer Science: **94%**
 - Ranked **1st** in School
- **Secondary Examination – April 2007 (CISCE, New Delhi, India)**
 - Aggregate: **95.28%**
 - Ranked **1st** in School

AWARDS AND HONORS

- Recipient of **Madan Sundar Sahu Memorial Scholarship**, IIT Kharagpur (2009-2010).
- Achieved an **All India Rank of 61** in 10th National Science Olympiad (**School Topper**).
- Achieved an **All India Rank of 159** in 8th National Cyber Olympiad (**School Topper**).
- Achieved an **International Rank of 186** in 2nd International Maths Olympiad (**School Topper**).
- **Finalist** for the prestigious **OPJEMS scholarship** for consecutive years - 2010 and 2011.

Internships and Research Experience

Attacking Data Center Networks

April 2012 – July 2012

Microsoft Research - Redmond, Washington

This project involved understanding problems in Data Center Networks and analyzing them from an adversarial perspective. We looked at how a malicious tenant could exploit certain problems in Data Center Networks to deny service to certain other tenants, or get an unfair share of the network resources.

Guide: Seny Kamara and Navendu Jain, XCG, Microsoft Research, Redmond

Systems Programming Internship

May 2011 – July 2011

Nucleodyne Systems - Cupertino, California

As a part of the training, we looked at driver development for the HP-UX Kernel and analysis of the Linux SCSI Subsystem using the System Tap tool. A significant part of our work also involved understanding and testing the SCSI protocol and its command set. We also worked towards the automation of SCSI command set testing with a Virtual Tape Library.

Guide: Kallol Biswas, CEO, Nucleodyne Systems

Routing in Delay Tolerant Networks (DTNs) with Directional Antennas

Winter 2010

IIT Kharagpur - Kharagpur, India

This project involved the study of the decrement of routing time in Delay Tolerant Networks (DTNs) with directional antennas as opposed to those with omnidirectional antennas. We modelled DTNs using classical SIRS epidemic dynamics and attempted to compare our model to the small world model to understand how the collapse in the graph diameter contributed to better performance in case of directional antennas.

Guide: Prof. Niloy Ganguly, Department of Computer Science and Engineering, IIT Kharagpur

Selected Development Projects

- Developed a Versioning File System built on top of FUSE (File System in User Space) for UNIX environment for the Inter-Hall OpenSoft Competition (2010 – 2011).
- Developed a Voice Operated File Explorer using Sphinx voice recognition and Flite speech to text toolkits for the UNIX environment for the Inter Hall OpenSoft Competition (2011 – 2012).
- Designed and developed an IIT Security Software as part of Software Engineering course under the guidance of Prof. Rajeev Kumar. There were many aspects to the project varying from SRS to Detailed Object Oriented Design. The software was implemented in Java.
- Developed a Compiler for a Python - type language as part of Compilers Course under the guidance of Prof. Goutam Biswas.
- Described a 32-bit single-cycle Reduced Instruction Set Computer in Verilog as part of Computer Organization and Architecture course under the guidance of Prof. Dipankar Sarkar and Prof. Debdeep Mukhopadhyay.
- Developed web-based portals for a Virtual Museum and a Resume Consultant, as a part of the Database Management Systems course under the guidance of Prof. Pabitra Mitra. The web-interface employed back-end relational databases managed with MySQL; the interfaces themselves were implemented in PHP, JavaScript and HTML/CSS.

Technical skills

LANGUAGES	<ul style="list-style-type: none"> • Programming Languages: C, C++, C#, Java, OCAML, Verilog HDL, Assembly Language, Prolog • Scripting Languages: Ruby, Python, Shell Scripting (Linux), PowerShell (Windows)
SOFTWARE & TECHNOLOGIES	<ul style="list-style-type: none"> • Platforms: Microsoft Windows, Mac OS, Linux • Web Technologies: HTML, PHP/MySQL, CSS, JavaScript • Software Tools: Auto-CAD, LaTeX, Microsoft Office, Netbeans IDE, Visual Studio

Extra-Curricular Activities

Student Representative

2010 – 2011, 2011 - 2012

Undergraduate Academic Advisory Committee, Department of Computer Science and Engineering

- Nominated by Head of the Department to be a part of the 6 member committee.
- Student Representative for feedback regarding courses and suggesting changes in curriculum

Captain

2012 - 2013

Nominated to lead the Hall Team in the following events in Gymkhana General Championships

- OpenSoft
- TechQuiz

Achievements

- Part of silver winning Inter-Hall TechQuiz Team, 2010 – 2011.
- Part of bronze winning Inter-Hall Ad Design team, 2010 – 2011.
- Part of silver winning Presentation Team for Inter-Hall Illumination Competition, Diwali 2010.
- Finalist, Overnite ACM Coding Competition, Kshitij Techno-Management Fest, 2010-2011, 2011-2012.

Relevant Coursework

THEORY	Algorithms I* & II, Discrete Structures, Formal Languages and Automata Theory, Theory of Computation**, Advanced Graph Theory**, Cryptography**
SYSTEMS	Operating Systems*, Computer Organization and Architecture*, Fault Tolerant Systems, Compilers*, Switching Circuits and Logic Design*, Database Management Systems*, Testing and Verification of Circuits**, Information Retrieval**, Signals and Networks*, Introduction to Electronics*
OTHERS	Programming and Data Structures*, Artificial Intelligence, Software Engineering*, Probability and Statistics, Linear Algebra

*Indicates course had a Laboratory component as well.

** Indicates the course is ongoing