SANDEEP DASGUPTA

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Academic Qualifications

Year	Examination	Institution	Percentage/CGPA
2011	M. Tech	IIT Kanpur	9.0 (CPI)
2006	B.E(Computer Science & Engineering)	Bengal Engineering And Science University, Shibpore, W.B	85.625%
2001	All India Senior School Certificate Examination(CBSE)	KVS No-1, Ichapur, W.B	90.2%
1999	All India Secondary School Examination(CBSE)	KVS No-1, Ichapur, W.B	83.8%

Area Of Interest

Program Analysis And Verification
Compiler Optimizations
Computational Complexity

M. Tech Thesis   (Guides: Dr. Sanjeev Kr. Aggarwal, Dr. Amey Karkare)

To disambiguate heap allocated data-structures by estimating the shape (Tree, Dag or Cyclic Graph) of the data structure accessible from each heap directed pointer. This will help in automatic parallelization of sequential code having heap intensive data structures. The work mainly focuses on devising a novel shape analysis technique.

M. Tech Subjects

1. Advanced Compiler Optimization
2. Special Topic: Mathematical Foundation Of Program Analysis And Verification.
3. Parallel Computing
4. Computational Complexity
5. System Security
6. Biometrics

Projects

M. Tech Course Projects

- Advanced Compiler Optimization :
  - To Extend the Generic Data Flow Analyzer GDFA (of gcc) to the data flow frameworks where data flow information can be represented using bit vectors but the frameworks are not bit vector frameworks because they are non-separable e.g., faint variable analysis, possible undefined variable analysis, strongly live variable analysis. **The work is being appreciated by Dr. Uday Khedkar, Professor Department of Computer Science & Engg., IIT Bombay.**
- Parallel Computing :
  - To design a processor, using parallel processing concepts, to execute an application of document retrieval system.
  - Developed a superscalar processor(with an issue rate of 2) using verilog hdl, an assembler for that processor using flex and bison and the successfully run the application on that processor.
  - Got **Highest Marks in the class** for the same.

Btech Term Project

- Affine Transformation of Digital Curves Using Chain Codes. The problem statement is to rotate a digital image by a given angle.

Academic Distinctions/Achievements

- **Poster "Dependence Analysis for Parallelization of Sequential Programs" got accepted at APLAS`10** (the 8th ASIAN Symposium on Programming Languages and Systems).
- Secured **Rank 1** in M. Tech 2009 Batch.
- Awarded **University medal for securing 1st Rank in BE, Computer Science And Engineering,** 2002 batch.
  - Awarded **Gold medal as the Best Student Award** by TCS (after graduation).
  - During B.E, **Consistently maintained 1st rank in all semesters except 7th when I secured 2nd rank.**
- Secured **145th Rank (99.64 percentile) in GATE 2009**.
- Selected as a member to participate in the **IXA Student Research Contest '05, conducted by INTEL India** for the Project named **'Design And Implementation Of Linux Based Proxy (NAT) Server On Intel Network Processor'**
- Ranked **356th** (amongst 1 lakh+ students) in **WB-JEE, 2002**(West Bengal Joint Entrance Examination) .
- **Participated in the CEP (Continuing Education & Quality Improvement Programmes) on " Essential Abstractions in GCC '10 ", A Workshop on GCC Internals by GCC Resource Center,** July 5-8, 2010, IIT Bombay.
- Passed **Junior National Mathematics Olympiad Contest** held by All India Mathematics Teachers Association with 65% marks.

Industry Experience	
Interra Systems India Pvt. Ltd. , Kolkata/Noida **Senior Member Of Technical Staff** **August 2006 to July 2009 (35 months)**	
Client Interaction	• Involved in a service project (for more than 24 months) with Atrenta, Noida for System Verilog feature development in **SPYGLASS-DFT.** • Served the same project single handedly for 12 months with promising deliverables.
Responsibilities	• Worked in projects like **Cheetah (Verilog and SystemVerilog Front-End Analyzer), MVV(Mixed verilog vhdl frond end analyzer)** • Works involve supporting new constructs of System Verilog IEEE-1800-2005, bug fixing, application development to provide utilities, Performance Improvement.
Key Learnings	• Managing people of diverse teams; Negotiations with Vendors; Setting up specific requirements. • The process flow involving requirement specification, testplan development, Design Documentation, Functional Specification, Coding, Testing/Debugging.
Major Achievements	• While serving for the Atrenta Service project **single handedly, developed port support for the verilog 1995/2005 parser, which was being praised by the customer side.** • Awarded **Interra Humming Bird Award** in recognition of and appreciation **for providing excellent support to Atrenta in the project "IEEE compliance for Spyglass".** • Achieved award to be the **First Runner's up in Camp'06::Coding Contest**, Organized by the company. • Partial elaboration and in memory configuration support in MVV almost single handedly.

Position Of Responsibility

Coordinator Carom Tournament   Sangarsh, An Intra-Hall Sports event of Hall – 8

- Set up rules and brings standardization of the entire process.
- Brought up transparency in the entire event.

Coordinator/Cashier M. Tech Fresher's Party, 2010

- Kept account of the money collection, and personally monitored each transaction.
- Actively participated in negotiations with the vendors.

Member of the working Committee, BECSALMAS, the spring festival of BESU

- Kept account of all monetary transactions from students and sponsors.

Key Extra Curricular Activity

- **Table Tennis (Singles) Winner** , **Sangarsh `10**, An Intra-Hall sports event of Hall-8.
- **Represented Hall-8 in Table Tennis** during inter-hall sports event, **Varchasva. `10**, IIT Kanpur.
- **Member of university Table Tennis team** of Bengal Engg. And Science University.
- **Represented Bengal Engg. & Science University during the Inter College Table Tennis Championship** held between Bengal Engineering and Science University and Kolaghat on October 05, 2004.

References

1. Dr. Amey Karkare, Assistant Professor, IIT Kanpur. http://www.cse.iitk.ac.in/users/karkare
2. Prof Samiran Chattopadhyay, Head Of The Department, Department of Information Technology, Jadavpur University, W.B. PH: 2335-8321 (O), 2414-6666

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