# Mayank Gupta                                                                           Résumé

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| Degree | Institute | Stream | Year | Performance |
|---|---|---|---|---|
| B. Tech (4th Year) | International Institute of Information Technology, Hyderabad | Computer Science Engineering | 2008-11 | 9.17/10 |
| Senior Secondary | Don Bosco School (Kolkata) | ISC | 2007-08 | 95.5% |
| Secondary | Don Bosco School (Kolkata) | ICSE | 2005-06 | 94.0% |

## Objective

Application and utilisation of the skills acquired during these years to serve the society at large.

## Academic Achievements

- Awarded **Dean's List I, Dean's List II** and **Merit List** for **Excellence in Academics** in **2008, 2009 and 2010**.
- Presented a "Poster and Demo" on **"Snake Tutor: Using Popular Commercial Games for Designing Educational Games for ESL"** at Research & Development Showcase 2010, IIIT Hyderabad.
- Secured **All India Rank 1368** in All India Engineering Entrance Examination (2008) among 792,753 candidates.
- Secured **All India Rank 5535** in IIT-Joint Entrance Examination (2008) among 311,258 candidates.
- Twice qualified (among **top 5%**) for **Indian National Olympiad in Informatics (2007 & 2008)** out of 7000 students who appeared.
- Awarded **Silver Merit Certificate** in 4th National Cyber Olympiad (2004).

## Areas of Interest

- Parallel Programming
- Compilers and Operating Systems
- Algorithms and Data Structures
- Programming on Embedded Systems

## Major Academic Projects

| Title | **Exploiting Pipelined Parallelism on Hybrid Architecture** | January, 2011 – 'till date' |
|---|---|---|
| **Faculty** | Professor Suresh Purini (Faculty at Centre for VLSI Design and Embedded Systems CVEST Lab, IIIT Hyderabad) | |
| **Description** | We are exploring the possibility of exploiting the inherent pipelined parallelism present in sequential programs and computing different parts on heterogeneous systems(say CPU & GPU) | |

| Title | **MILLEE** | December 2009 – April 2011 |
|---|---|---|
| **Faculty** | Professor Matthew Kam (Human Computer Interaction Institute, CMU, USA) | |
| **Description** | I was a senior programmer in the "Mobile and Immersive Learning for Literacy in Emerging Economies" (MILLEE) Project. I have developed games (SnakeTutor, Marbles, MazeMan, Break-out) which have been usability tested for teaching English as Second Language (on Mobile Platform using J2ME) to children in rural India who go to less endowed schools. | |

| Title | **Studies in Dynamic Compilation (Honours Project)** | August 2010 – December 2010 |
|---|---|---|
| **Faculty** | Professor Suresh Purini | |
| **Description** | The aim is to study performance parameters of various bench mark programs and then develop compiler techniques which utilise the underlying processor architecture's special features to improve program run time. I had designed a compiler from scratch. | |

| Title | **Flash/Actionscript Video Portal** | August 2009 – December 2009 |
|---|---|---|
| **Faculty** | Lecturer Kirti Garg (Faculty at Software Engineering Lab, IIIT Hyderabad) | |
| **Description** | I developed a web based video portal like You-tube, Metacafe etc, which facilitated the upload of Advertisements by Marketing Companies. These uploaded advertisements are embedded into the videos uploaded by the normal user, according to his choice. The Video Player was made using Adobe Flash Player coupled with Actionscript3.0 and supported all functionalities associated with a conventional video player. The web interface used PHP technology. | |

| Title | **Operating Systems Projects** | August 2009 – December 2009 |
|---|---|---|
| **Faculty** | Professor Kamal Karlapalem (Dean Academics, IIIT Hyderabad) | |
| **Description** | The aim was to implement different aspects of an Operating System and test them for different simulation parameters (using Java). For example - I implemented the Page Fault Handler using the LRU Approximation Algorithm making use of a reference memory bit which the MMU provided for. This helped me obtain a good idea about the working of an Operating System and the various complexities involved in allowing concurrency. | |

| Title | **Computer Programming Project** | October 2008 |
|---|---|---|
| **Faculty** | Professor C V Jawahar | |
| **Description** | Created a Query System for reading a Students Database stored as Flat Files. The Query interface mimics MySql. Working command implemented were SELECT, FROM, WHERE and ORDER BY. I used C programming language and the code spans over few thousand lines. | |

## Technical Skill Set

| | |
|---|---|
| **Programming Languages** | C(advanced), C++(advanced), Java(advanced), J2ME(moderate) |
| **Scripting Languages** | Python(moderate), Bash(moderate), Actionscript3.0(moderate), Scheme(moderate) |
| **Operating Systems** | GNU Linux, Windows |
| **Web Technologies** | HTML(moderate), CSS(basic), PHP(basic), Web2py(moderate) |
| **Database Management Systems** | MySql(moderate) |
| **Assembly Level Language** | NASM(moderate), MIPS(moderate) |
| **Parallel Programming Language** | CUDA 3.0 |
| **Other Software** | Gimp, Adobe Photoshop, Flash Professional, Adobe After Effects |

## Advanced Courses (till May '11)

Compilers, Advanced Compilers, Principles of Programming Languages, Formal Methods
System and Resource Virtualisation
Algorithms with an Introduction to Theory of Computation, Artificial Intelligence, Statistical Methods in AI
Structured Systems Analysis and Design, Engineering Systems, Principles of Information Security
Basic Electronic Circuits and Circuit Analysis, Digital Signal Analysis and Application
Digital Logic and Processors Design, Computer System Organization, Operating Systems
Mathematics - Graph theory, Calculus, Group theory, Vector Spaces, Complex Analysis, Numerical Analysis
Computer Networks, Computer Graphics, Introduction to Database Management Systems

## Work Experience

- I am currently a **Teaching Assistant** for **Digital Logic and Processors** under Prof. Vinay Mittal.
- I worked as a **Software Engineering Intern in Test** at **Google, Bangalore** (May '11–July '11)
- I was a **Teaching Assistant** for **Computer System Organisation** under Prof. Suresh Purini (Jan '11–May '11)
- I was a **Teaching Assistant** for **Computer Programming** and **IT Workshop 1** under Prof. Kishore S Prahallad and Lecturer Saurabh Barjatiya (Aug '10–Dec '10)
- I **interned** under Prof. Matthew Kam **(HCII, CMU)** on MILLEE Project (May '10–July '10)

## Publications/Papers

- Submitted a poster on "Snake Tutor: Using Commercial Games for Designing Educational Games for ESL" to India HCI 2010 Conference. *Result: Not Accepted.*

## Miscellaneous Activities

- I am an active member of **Ping! (IIIT-H's monthly newsletter)**, member of **IIIT-H Hostel Committee** and the **Student Lead** of **Student Placement Committee, 2011-12**.
- I am fairly experienced in **Adobe Photoshop, Flash Professional** and **After Effects**.
- I was the **Director** of **Cyber Space Club (the Computer Club)** of our school in 2007-08, an active member of my school's **Programming Team** – having won many inter-school coding competitions like "Bosco Logistics' 07","Bosco Mastermind' 07" etc. I also represented my school in "**Inter-school TCS IT Wiz 2007**".
- I have a passion for lawn tennis and chess. I have been the **class chess champion** in school.

## Declaration

**I hereby declare that the above information is true to the best of my knowledge.**