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Curriculum Vitae
Neeraj Kumar

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A computer enthusiast, interested in problem solving, aiming to build a career of research in Computer Science.

Research Interests

I am interested in Computer Systems research, particularly in designing and understanding the theoretical foundations of Parallel and Distributed systems.

Education

- **Bachelor in Technology, Computer Science and Engineering**
  [Indian Institute of Technology, Banaras Hindu University Varanasi, India](#)
  Graduation Year : 2010
  CGPA: **8.69 / 10** *(on absolute scale)*
  Departmental Rank: **4** out of **51** students.

- **Other**
  Intermediate (10 + 2), CBSE Board
  Year :**2006, 93.2 %**
  High School (Xth), CBSE Board,
  Year : **2004, 92.8 %**

Work Experience

- **Currently,** Research and Development Engineer at **Mentor Graphics**, Noida Development Center. Working for Veloce Compiler Team, Responsibilities include developing efficient solutions/algorithms, mainly dealing with routing, handling issues and feature requests. Duration: July 2010 – Now.

- **Summer Intern, Mentor Graphics (Summers 2009)**
  Worked on automating and improving the Veloce compiler regression testing infrastructure. Was offered a permanent position in the organization due to my contributions to this project.

- **Summer Intern, Infineon Technologies (Summers 2008)**
  Worked with Infineon wireline division. The task was to improve the build system of the embedded linux distribution for the wireless routers.

Achievements

1. Selected for Google Summer of Code 2010,an annual opensource software development contest organized by Google..
2. Qualified Indian Institute of Technology, Joint Entrance Exam-2006, conducted by IITs and was ranked among top 1% of about 0.3 million applicants.
3. Was among top 5 of about 500 students enrolled in first year of my undergraduate course.
4. Received Indian Oil Scholarship for undergraduate studies (2006-2010).
5. Received CBSE merit Scholarship for excellent performance in class XIIth board examinations.

Past Projects

- As part of my Undergraduate Major Project I have worked on TCP/IP Protocol stack development using design patterns for ES Operating System Open Source project. ES's TCP/IP stack is essentially based on the Conduits+ framework laid out in "A Framework for Network Protocol Software, by Huni, Johnson, Engel, 1995 ". I explored this design and extended it to add the support for ARP caching and ICMP Redirect.

- As part of **Google Summer of Code 2010,** I worked as a developer for ScummVM, an open source Game Virtual Machine. I had implemented a Game Engine, that could invoke and test various ScummVM subsystems.

- As my junior year minor project, I had implemented a distributed caching proxy server. The idea was essentially based upon "Adaptive Distributed caching by kaiser, Tsui, Liu, 2002".

- Wrote an architecture-aware parallel implementation for Template Matching Algorithm exploiting Intel SIMD instructions. This resulted in close to 200X improvement compared to the sequential implementation.

- Implemented a tiny simulator for verilog designs. The simulator would take verilog description of a basic combinational circuit, and would produce output vectors corresponding to various input combinations fed from command line.

- Implemented the Heterogeneous Earliest Finish Time (HEFT) Task Allocation Algorithm in parallel environment using Message Passing Interface (MPI).

- Developed a Java based Online Crime Reporting system for submission to IBM's The Great Mind Challenge. The project made to the finals of the contest.

Technical Skills

- Have worked with pretty much legacy code, and therefore capable of delivering efficient solutions in short time.
- C++ is the programming language of my choice. Besides, I have programmed in C/Perl and Java.
- Acquainted with the elements of object oriented programming, writing efficient, reusable, and maintainable code, Design Patterns.
- Well conversant with GDB. shell scripts (Bash, C Shell)
- Well conversant with version control, and other linux tools namely, make, awk, sed etc.
- Acquainted with web application development, Java Servlets, JSP, Javascript/HTML/CSS, Databases (IBM DB2, MySql)
- Have exposure to Parallel Programming with Message Passing Interface (MPI).

Miscellaneous

- Have won various Quiz Contests and Programming events at school and college level.
- Have good communication skills in English/Hindi, and can understand some french.
- Web Presence here at sud03r.github.com .