

\*\*\*\*\* Resume \*\*\*\*\*

## PRANAV YADAV

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### PURPOSE

Summer Internship for a period of 60 days during summer 2005 beginning second week of May till July that provides me with:

1. An opportunity for intuitive thinking and learning while facing diverse problems.
2. An exposure to enhance my analytical and technical skills.

### FIELDS OF INTERST

Computer Networks  
Operating System  
Parallel Computing  
Design and analyses of Algorithms  
Bioinformatics  
Algebra  
Cryptology  
Graph Theory  
Optimization  
Differential Equation

### PROJECTS:

#### SEMESTER 2005 INDIAN INSTITUTE OF TECHNOLOGY, NEW DELHI

- Using **Microsoft Development Kit** designed a **driver** to encrypt and decrypt all the packages going to and fro. Thus implemented a secure mode of communication between two machines using C language under Prof. Hazur Saran (IITD Computer Science Department).
- Designed **point to point (p2p) protocol** for data communication between two computers. The main feature of the protocol was that data was transmitted byte by byte instead of packets and parameter negotiation using C under Prof. Hazur Saran (IITD Computer Science Department).

#### SEMESTER 2004 INDIAN INSTITUTE OF TECHNOLOGY, NEW DELHI

- Developed a full fledged **Web-based Server Site** which supported functions like login, registration, search, email, upload files using PHP, HTML and MYSQL on Windows Server and Apache under Prof. Lipika Dey (IITD Mathematics Department).
- Developed a **Web Crawler** which crawls pages and stores the pages as well produces the graph of as to how links are traversed during crawling following Robot Exclusion Protocol. Program was coded in Java and application was developed as an applet under the guidance of Prof. Lipika Dey (IITD Mathematics Department).
- Wrote the SRS (Software Requirement Specification), SDD(Software Design Document) for both the above two projects.

#### SUMMER 2004 INDIAN INSTITUTE OF TECHNOLOGY, NEW DELHI

Digitization, curve matching and **character recognition** which helped to recognise a single letter from a scanned file of

a hand written letter under Prof. M. Hanmandlu (IITD Electrical Department).

#### **WINTER 2003 INDIAN INSTITUTE OF TECHNOLOGY, NEW DELHI**

Automata theory and “**Game of Life**” studying the time taken to attain the final state depending on the starting pattern of the cells under Prof. Anima Nagar (IITD Mathematics Department).

### **EDUCATION**

#### **2002-2005 INDIAN INSTITUTE OF TECHNOLOGY, NEW DELHI**

Major: Mathematics and Computing (III<sup>rd</sup> year)

Expected Degree: M.Tech Integrated (5 years)

#### **Courses Completed:**

- **Computer Science:** Data Structure, Computer Architecture, File Structure & Information System Design, Analysis and Design of Algorithm, Super Computing for Engineering Applications, , Computer Technology Lab, Software Engineering, Database Management System, , Operating Systems, Computer Networks.
- **Mathematics:** Advanced Calculus, Real and Complex Analyses, Metric space, Numerical methods and Computation, Linear Algebra, Discrete Mathematical Structures, Differential Equations, Optimization methods and Applications, Probability and Stochastic Processes Topology and Functional Analysis, Applied Mathematical Techniques, Computation Methods For Differential Equations, Modern Algebra.
- **Electrical Science / Electronics:** Signal and Systems, Electronic Circuit Analyses, Digital Electronics Circuit, Digital Electronics Lab..
- **Programming Skills:** C, C++, JAVA, Pascal, Perl, SQL, HTML, PHP, MIPS and MATLAB.
- **Platforms:** Red Hat Linux 7.0/8.0/9.0, Fedora 1, 2 & 3, Mandrake, Windows XP/2k/NT/98/95/3.1, MS-DOS 5.0/6.0, Unix, Solaris.

#### **1999-2001 KENDRIYA VIDYALAYA, REWARI**

Major: Physics, Chemistry, Mathematics, Biology.

Grades: 80.0% in CBSE, 2001

#### **1997-1999 JAIN PUBLIC SCHOOL, REWARI**

Major: Science, Mathematics, English, Hindi, Sanskrit, Social Studies

Grades: 88.0% in CBSE, 1999

#### **Lab Experience:**

- Using MPI for **parallel processing** wrote a program to calculate the FFT (Fast Fourier Transform) of a N\*N cube using standard serial fast Fourier transform.
- Simulated the journey of 5 cars traveling in 3 lanes with the collision detection and lane changing mechanism using “**pthreads**” in C and implemented the graphics part using “**ncurses**” library.
- Simulated the famous **Fish Particle problem** using the MPI in C and generated the computation time for various number of particles.
- Built a **I/O library** to supplement exiting library of C++ compiler to support calls like fopen, fclose.
- Designed a solution for Real State Company management problem and then implemented the solution using **Oracle SQL**.

- Designed **Spell-checker** using tries on the top of a source dictionary of 150,000 words.
- Studied the dependence of the length of **Minimal Spanning Tree** for random input points in a hypercube of k dimensions.
- Build a **mini calculator** to carry out addition, subtraction and multiplication in hardware laboratory.
- Worked with **8\*8** and **16\*16 RAM** to implement sate machine and **GCD** (Greatest Common Divisor) in computer architecture.

## ADDITIONAL INFORMATION

- Language proficiency: **Hindi, English** and done Basic **German**. Course flouted by IITD in association with Max Muller.
- Received **Merit Certificate** for being among top 0.1% in Mathematics in Secondary School (1999) awarded by Central Board of Secondary Education (CBSE).
- Ranked **17th in the NATIONAL level science Olympiad 2001** organized by National Science Olympiad Foundation in India.
- Ranked **5th at the State level** by National Science Olympiad 2001.
- Secured an All **India Rank of 1024** in IIT Joint Entrance Examination in which over 250,000 students across the country compete.(i.e. In top 0.5% of the country).

## EXTRACURRICULAR

- I will be **Coordinator** of the Hospitality Cell of **Tryst** (IITD Annual Technical Festival ) this year (2005)  
<http://www.iitd.ernet.in/~tryst>
- **Member of Security team** in **Rendezvous** (IITD Annual Festival) 2002.
- Won prizes in **Athletics** at district level.
- Selected to represent school at **State level Sports Meet**.
- Played **Badminton** at district level.
- Participated in events organized by various clubs in IITD.
- Won numerous competitions in literary and debating clubs at district level.