

ASHISH AGRAWAL

Senior Postgraduate
M. Tech- B. Tech Dual Degree Program
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Academic Background

I am a Senior Postgraduate student, have completed 8 of 10 semesters of the B.Tech - M.Tech Dual Degree Program in the department of Computer Science and Engineering at the Indian Institute of Technology Kanpur, India.

Year	Degree/Certificate	Institute	CGPA/%
2009 (Expected)	M. Tech- B. Tech Dual Degree Program	Indian Institute of Technology Kanpur, India	M. Tech: 9.5/10 B. Tech: 7.7/10
2002	Senior Secondary School	G.S.S.S, Taranagar	82%
2000	High School	G.S.S.S, Taranagar	81%

Courses Highlights

Departmental Courses

Introduction to Computing(Java)	Principle of Databases
Data Structure and Algorithms	Principle of Programming Language
Computer Organization	Compiler Design
Operating System	Algorithms-2
Theory of Computation	Computer Architecture
Programming Tools and Techniques	Advance Computer Architecture
Discrete Mathematics	Mobile Computing
Introduction to software Engineering	Computer Networks
Topics in Internet Technologies	Advance Computer Networks
Parallel Semi-Numerical & Non-numerical Algorithm	Topics in Distributed Systems

Other Courses

Introduction to Electronics	Real and Complex Analysis
Engineering Graphics	Vector Calculus
Introduction to Manufacturing Process	Differential Equations
Mechanics of Solids	Introduction to Sociology
Sociology of Development	Indian society and culture

Internship

(May-July, 2007)

Guide: Mr. Niraj Kumar

Company: Decision Mapper, Bangalore

Worked on following two projects:

1. **Surveyor**: Surveyor is an online survey portal to create and manage surveys and analyze the results. More emphasis was given to better user interface for managing the surveys and analyzing results. A basic code base was available in JAVA-Struts framework. For fast and better user interactivity I integrated Struts framework with GWT(Google WebTool Kit for Ajax). For better analysis of data I integrated tools like GlazedLists, JFree Charts with java applet to give better visualization and filtering options in csv formats of results.
2. **ShopAndShare**: Created an Ecommerce application to run on facebook platform. ShopAndShare is an application where a facebook user can do almost all basic operation of amazon sites (of all domains) like search, buy, reviews from the facebook account without going to amazon site. It is also a social networking platform for amazon products among facebook users. Some of these features are like user can share amazon items with his/her friends, get latest updates by friends for amazon products etc.
Tools Used: Struts framework , FBML, Facebook API, Amazon Web Service, Postgress,

Selected Projects

➤ SemSearch:

(Jan-April 2008)

Guide: Prof. T. V. Prabhakar, CSE Department, IIT Kanpur.

Description: In this project, We in a group of three students, created a web application for Document Sharing and Semantic Search. Instead of user to provide tags we parsed the tags from the document itself. To add semantics to the search results we used OpenCalais web service. Synonyms vocabulary was also used for semantic searching. For better GUI and asynchronus response AJAX is implemented using GWT(Google web tool kit). Some other features like Did You Mean, Special Search(search by tag type like company, Technical etc.).

Tools Used: OpenCalais Web Service, Lucene, PDFBox, Wordnet, GWT

➤ GitaSuperSite :

(Dec 2006)

Guide: Prof. T. V. Prabhakar, CSE Department, IIT Kanpur.

Worked on an IBM project “GitaSuperSite” as Project Sr. Research Asst, which handles huge volumes of data of ritual texts. Work is to implement a fast, user interactive GUI with good visualizations for the New GitaSuperSite. After testing few web technologies for the above requirements, GUI was created using GWT, GWM and

Google Maps. GWT was selected for fast and user interactivity and Google Maps and GWM was fixed for providing good visualization.

➤ **Sri YogaVasishtam (Ruby):** *(Summer 2006)*

Guide: Prof. T. V. Prabhakar, CSE Department, IIT Kanpur.

Developed a Web application using scripting language Ruby on Ruby-onrails platform. Application manages both static and dynamic databases of big ancient text of “Yogavasishtam” with the functionalities of online editing by authenticated user and content management of versions of the database.

➤ **UDP-Chat system (C):** *(Fall 2006)*

Guide: Dr. Bhaskar Raman, CSE Department, IIT Kanpur.

Developed a chat system with functionalities of conferencing and file sending. Designed a protocol to implement reliability, flow control and congestion control over transport layer in User Datagram Protocol (UDP) using socket programming.

➤ **Implementation of SDLX Processor (Verilog):** *(Spring 2006)*

Guide: Dr. Rajat Moona, CSE Department, IIT Kanpur.

Project done as a part of course curriculum of ‘Computer Organization’, involved implementation of SDLX processor having Instruction-fetch & Register-decode unit, ALU, Register file and MEM unit with delayed branch semantics. Work was done on Spartan-3(FPGA board).

➤ **Extension of Nachos(C):** *(Fall 2006)*

Guide: Dr. Manindra Agarwal, CSE Department, IIT Kanpur.

As a part of course curriculum of Operating System, I with two of my colleges, implemented multiprogramming , memory management unit, system calls, memory sharing, process scheduling etc in a basic operating system (Nachos).

➤ **Algol Compiler:** (ongoing) *(Spring 2007)*

Guide: Dr. Sanjeev Kumar Agarwal, CSE Department, IIT Kanpur.

As a part of course curriculum of Compiler Design, I with two of my colleges, are developing a compiler for Algol68 language in C with almost all Algol's features. We have completed lexical & Syntax Analyzer and currently working on Semantic analyzer. We have also proposed to implement Code Optimizer with Intermediate Language Generation and Code Generation.

Awards and Achievements

- Was placed among 0.1 percentile of the students appearing for IIT-JEE 2004 and secured All India Rank 371.
- Awarded Merit-cum-Means Scholarship from IIT Kanpur for duration 2004-07.
- Awarded 2nd position for the “Thread Binder” project in the Manufacturing Process course among around 250 students.

Technical Skills

- **Programming Languages:** Java, C , C++, Assembly Language, Ruby, Algol, XML, Javascript
- **Tools:** GWT, AJAX, Prefuse Visualization Toolkit, Ruby-Onrails, MySql, Xilinx, Spartan3(FPGA Board), Photoshop, GlazedLists, HTML, LaTeX, Lex, Yacc, CSS
- **Hardware Description Languages:** Verilog, VHDL

Interests & Extra-Curricular Activities

- I like exploring new Web Technologies & Tools and have experience with technologies like Ruby-onRails, Google WebToolKit, Prefuse Visulization Toolkit, Google Maps and AJAX etc.
- Active member of Sun club, IIT Kanpur (A club which promotes new technologies of Sun Microsystems by tacking up various projects).
- I have served National Cadet Corps as a cadet for the year 2004-05.
- I have effectively contributed my skills in various managing cells in Institute's Cultural and Technical festivals.