

PRASHANT AGRAWAL

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EDUCATION

- **MS (by Research) – Indian Institute of Technology Kharagpur** [November 2004 - Present]
Currently in 4th semester in the Department of Computer Science & Engineering; Thesis submission by January 2007.
CGPA: 8.43/10
 - **B. Tech (Computer Engineering) – Sikkim Manipal Institute of Technology, Majitar (Sikkim)** [2000 – 2004]
Graduation: 84.51% (only last 4 semesters considered), Aggregate: 81.5%
Thesis: Designing and Implementation of Microcontroller and ASIC based System for Telemedicine Application
 - **Higher Secondary – Birla Senior Secondary School, Pilani (Rajasthan)** [1997 - 1999]
Aggregate: 92.4%, Math: 98%, Physics: 95%, Chemistry: 92%, Computer Science: 94%
 - **High School – St. Stephen's High School, Tinsukia (Assam)** [1997]
Aggregate: 84.4%, General Math: 94.7%, Advanced Math: 92%, Science: 85.3%
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RESEARCH EXPERIENCE

- **Intel Technology India (P) Ltd., Bangalore – Graduate Internship (Technical)** [May - October 2006]
Group: Low Power Team (Mobile Chipset Design), Mobility Group
Project Title: Development of New Power Model for Dynamic Power Estimation of Mobile Memory Controller Hub
Supervisor: Mr. Vishvanathan L. Nenneli, Engineering Manager, Mobile Chipset Design
 - **IIT Kharagpur – MS Thesis** [May 2006 - Present]
Project Title: Power Modeling Approach for Dynamic Power Estimation
Supervisor: Prof. Ajit Pal, Dept. of Computer Sc. & Engineering, IIT Kharagpur
 - **IIT Kharagpur – Junior Project Assistant** [July 2004 - April 2006]
Project Title: Electrocardiogram (ECG) Acquisition, Processing and Monitoring System
Supervisor: Prof. Ajit Pal, Dept. of Computer Sc. & Engineering, IIT Kharagpur
Prof. Amit Patra, Dept. of Electrical Engineering, IIT Kharagpur
Sponsor: Ministry of Human Resources Development (MHRD), New Delhi, India.
 - **IIT Kharagpur – Visiting Student** [January – May 2004]
Project Title: Designing and Implementation of Microcontroller and ASIC based System for Telemedicine Application
Supervisor: Prof. Ajit Pal, Dept. of Computer Sc. & Engineering, IIT Kharagpur
 - **Centre of Electronics Design and Technology of India, Calicut – Summer Training** [June – July 2003]
Project Title: Designing with 8 and 16 bit Microcontrollers
 - 8 bit digital calculator using 8 bit microcontroller
 - A real time data acquisition and control system using 16 bit microcontroller
 - A stepper motor control system using 16 bit microcontrollerSupervisor: Mr. K. M. Martin, Principal Design Engineer, Embedded Systems Group
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PROJECTS UNDERTAKEN

- **Custom Instruction based Implementation of Biomedical Application Using Soft Processors** [October 2006 – Present]
Supervisor: Prof. Ajit Pal, Dept. of Computer Sc. & Engineering, IIT Kharagpur
A Discrete Wavelet Transformation based ECG processing algorithm has been implemented using Altera's NIOS II soft processor. This implementation is being used as a case study to develop methodologies for energy optimization using custom instruction extensions and micro-architecture reconfiguration of the soft processor.
- **Lift Controller Design** [November 2005]
Course: Architectural Design of IC
Under: Prof. A. S. Dhar, Dept. of Electronics and Electrical Communication Engineering
A micro-programmed lift controller was designed for a 4 storied building.
- **Area and Power Comparison of a Circuit Implemented using Different Architectures** [April 2005]
Course: Low Power Circuits and Systems
Under: Prof. Ajit Pal
A 4-bit unsigned fixed point array multiplier was implemented using normal, parallel, pipelined and parallel-pipelined architectures and their area and power was compared.
- **Payroll Software for Tea Gardens** [August – November 2003]
7th semester project at Sikkim Manipal Institute of Technology
Supervisor: Mr. Jyoti P. Singh, Lecturer, Dept. of Computer Engineering, SMIT
Developed a payroll software for Lekhapani Tea Co. Pvt. Ltd., Longtong 3rd Mile, PO: Udaypur, Dist: Tinsukia 786171 Assam (India) and its sister concerns using MS Visual Basic 6.0 and MS SQL Server 7.0.

- **Fingerprint Verification Software** [February – April 2002]
This software was developed in C++ using introductory concepts of Digital Image Processing. The software was adjudged 3rd in an Intra College Software Competition held at Sikkim Manipal Institute of Technology.
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PUBLICATIONS

- P. Agrawal, et. al., “**An Approach for Pre-Silicon Power Modeling**”, accepted for presentation in International Conference on Computing: Theory and Applications, Kolkata (India), March 2007.
 - P. Agrawal, et. al., “**A Path based Modeling Approach for Dynamic Power Estimation**”, accepted for presentation in ACM Great Lakes Symposium on VLSI, Stresa-Lago Maggiore (Italy), March 2007.
 - P. Agrawal, et. al., “**A Scalable Modeling Technique to Estimate Dynamic Thermal Design Power of Datapath Intensive Designs**”, communicated to IEEE Computer Society Annual Symposium on VLSI, Porto Alegre (Brazil), May 2007.
 - P. Agrawal, et. al., “**Design and Implementation of a FPGA based Portable System for ECG Signal Acquisition, Processing and Monitoring**”, Indian Conference on Medical Informatics & Telemedicine, pp. 21-24, Kharagpur, December 2006.
 - P. Agrawal, et. al., “**ECG Data Acquisition and Monitoring System for Telemedicine Application**”, Indian Conference on Medical Informatics & Telemedicine, pp. 159-162, Kharagpur, February 2005.
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TECHNICAL SKILLS SET

- *Programming Skills:* C, Assembly Language, Embedded C for 8051, Verilog, Perl, Unix Shell Scripting, HTML, MS Visual Basic 6.0
 - *FPGA Development Kits:* Altera QuartusII 4.2 tool suite, Altera NIOS II Embedded Processors, Xilinx ISE 7.1i tool suite
 - *CAD Tools:* Familiar with Synopsys PrimePower and Mentor ModelSim
 - *Software Packages:* MATLAB 7.0, MS Office, Macromedia Dreamweaver
 - *Operating Systems:* Windows, Linux
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TEACHING ASSISTANTSHIPS

- **Low Power Circuits & Systems** [Spring Semester, 2006]
Professor-In-Charge: Prof. A. Pal
This was a graduate level theory course and my responsibilities included preparation of course and lecture material.
 - **Computer Organization & Operating Systems** [Autumn Semester, 2005]
Professors-In-Charge: Prof. P. S. Dey, Prof. D. Sarkar, Prof. D. R. Chowdhury, Prof. R. Mall
Conducted and graded weekly laboratory for the 5th semester B.Tech students of the Dept. of Electrical Engineering and the Dept. of Electronics & Communication Engineering. Also delivered lectures in the weekly tutorial class for the course.
 - **Computer Organization & Architecture** [Spring Semester, 2005]
Professors-In-Charge: Prof. A. Pal, Prof. D. Sarkar, Prof. S. C. De Sarkar
Conducted and graded weekly laboratory for the 4th semester B.Tech students of the Dept. of Computer Sc. & Engineering.
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AWARDS/HONORS RECEIVED

- **2nd rank in overall order of merit** in the university, for my batch, considering marks secured in all the 8 semesters of **B. Tech (Computer Engineering)**. [2004]
 - **2nd rank** in the department for academic year 2001- 2002 of B.Tech (Computer Engineering). [2002]
 - **Atmaram Padia Gold Medal**, by Birla Education Trust (BET), Pilani for standing **1st among all BET schools** in Class XII board examinations. [1999]
 - **Certificate of Honor**, for securing **highest marks in Math and Computer Science** in the school in Class XII board examinations [1999]
 - **National Scholarships**, nominated by Board of Secondary Education, Assam for securing **14th rank in state** in Class X board examinations. (not accepted) [1997]
 - **Certificate of Proficiency** by the Office of the Deputy Commissioner, Tinsukia District (Assam) for standing **2nd in the district** in Class X board examinations. [50th Anniversary of Indian Independence Day, 15th August 1997]
 - **Scroll of Honor** by Rotary Club Tinsukia for outstanding performance in Class X board examinations. [1997]
 - **Certificate** by Lions Club Tinsukia for outstanding performance in Class X board examinations. [1997]
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PROFESSIONAL ASSOCIATIONS

- Student Member of **IEEE USA, IEEE Circuits and Systems Society** and **VLSI Society of India**.
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CO-CURRICULAR ACTIVITIES

- Active member of IEEE Kharagpur Student chapter [July 2004 – present]
- Played an active role in organizing Asian Test Symposium 2005 held at Kolkata and International Workshop on Distributed Computing 2005 held at IIT Kharagpur.
- 1st prize in **Inter School Science Quiz Competition** organized by Birla Education Trust, Pilani, Rajasthan. [1998]
- 3rd prize in **Sir Padampat Singhanian Memorial Science Quiz** organized by Lala Kamlapat Singhanian Education Center, Gotan, Rajasthan. [1998]
- 1st prize in **Open Quiz “Bright `96”** organized by Bright’s Computer Education, Tinsukia, Assam. [1996]
- Participated in **National Children Science Congress** at District & State Levels. Presented a seminar on **“Care for Uncared – Child Labour”** based on survey conducted in Tinsukia. [1996]
- 1st prize in **Inter School Youth Act Quiz Competition** organized by Rotary Club, Tinsukia, Assam. [1995]
- 1st prize in **All Assam Children Congress Quiz Competition** organized by Chabua Sahitya Sabha, Chabua, Assam. [1995]
- 3rd prize in **Inter School Essay Writing Competition (English)** organized by Vivekanand Kendra Vidyalaya, Tinsukia on the occasion of Universal Brotherhood Day. The topic of the essay was **“Swami Vivekanand’s Views on Education”**. [1995]
- Presented a paper on **“Ores and Minerals”** in a **District Level Seminar cum Competition** on “Resources from Earth”. [1995]
- Participated in **National Children Science Congress** at District Level. Presented a seminar on **“Clean Society – Exploits of Child Labour”** based on survey conducted in Tinsukia. [1995]
- 7th position in **District Level Talent Search Examination** organized by Chabua Sahitya Sabha, Chabua (Assam). [1994, 1995]
- Participated in **District Level Science Exhibition cum Competition**. Demonstrated a non working model on **“How Live Telecast is Received”** and was selected for state level competition. [1994]

EXTRA CURRICULAR ACTIVITIES

- Member of organizing committee of **“Kaalrav 2002”** – the annual college festival at Sikkim Manipal Institute of Technology. **Conceptualized and implemented software for quiz competition for the first time in college.**
- 2nd prize in **Intra College Photography Competition** organized at Sikkim Manipal Institute of Technology. [2002]
- Completed the **Bronze Level of International Award for Young People** instituted by Duke of Edinburg. [1998]
- 3rd prize in **Inter School Extempore (Senior Group) Competition** organized by Rotary Club, Tinsukia. [1996]
- **Captain of runner’s up Cricket Team** in the Inter-House Cricket Tournament at St. Stephen’s High School. [1995]
- **Positions Held**
 - **At Sikkim Manipal Institute of Technology**

Joint Secretary (Students Council)	2002 - 03
Sub Editor (College Editorial Board)	2002 - 03
Head Student Representative	2000 – 01
 - **At Birla Senior Secondary School**

House Prefect	1998 - 99
House in Charge (Cultural Activities)	1997 - 98
 - **At St. Stephen’s High School**

Group Captain	1995 - 96
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REFERENCE

Available upon request