

## Mohit Garg

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### WORK EXPERIENCE

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**Innoviti Embedded Solutions Pvt. Ltd., Bangalore** [www.innoviti.com](http://www.innoviti.com) Sep. 2006 – Jul. 2007  
Wireless products for consumer & e-payment industries. Customers include Titan, Verifone, Gemalto, ICICI Bank etc. Among the Red Herring top 100 most promising technology startups in Asia (2006).

*Senior Design Engineer (Apr. 2007 – ), System Engineer (Sep. 2006 – Mar. 2007)*

Worked on **end-to-end planning, design and development** of three product lines

- **Co-architected and developed payzee™-retro**, a IEEE 802.15.4 based plug-n-play wireless peripheral for PoS terminals. Units currently being deployed across India.
- **Project prime for trueID™** – a biometric peripheral for PoS terminals. Independently and completely owned this one of its kind product in the e-payment industry. **Led a team of four** members towards conceptualisation, architecture and development of the product. Highest revenue earning product for the company in Q4 2006-2007.
- **Co-architected and developed** a graphics & wireless enabled **smart watch** with a service provider based subscription model around it. Developed both the watch and the subscription server. Conceptualised the **patent-pending** innovative graphical dial-pattern display & sharing mechanism.
- **Planned the release execution and defined roadmaps** for all three products. Handled requirement discussions and feedback sessions with customers.
- Developed & introduced several software tools & processes in the company. Worked with two peers to handle the entire recruitment process.

**NVidia Graphics Pvt. Ltd., Bangalore** [www.nvidia.com](http://www.nvidia.com) Aug. 2005 – Aug. 2006

NVidia is a fabless semiconductor company and is the world leader in graphics and media processors.

*Hardware Engineer (Aug. 2005 – Aug. 2006)*

Worked on **H.264 video codec** in the Handheld-GPU business unit

- Responsible for **optimising and integrating the firmware encoder** with the chip driver to meet performance targets. Improved performance by more than 50%. Played an important role in **rate control analysis and quality enhancements** at low bit-rates.
- Involved in the **architectural design & specification** of the hardware encoder. Responsible for developing the transaction accurate **C-Model and validation** of a sub-module.

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### EDUCATION

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<b>Bachelor and Master of Technology (Dual Degree), 2005</b> in Electrical Engineering: Communications & Signal Processing	IIT Bombay, Mumbai, India	<b>CGPA: 9.89/10.0</b> <b>Ranked I</b>
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### HONOURS & ACHIEVEMENTS

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#### Honours

- **Institute Gold Medal**, IIT Bombay: **Topper among all Dual Degree students**, 2000-04
- **Institute Silver Medal**, IIT Bombay: Topper among the Dual Degree students in the Electrical Engineering Department, 2000-05
- Titles of "Manav Alok" (2000) and "Manav Ganit Vishisht" (1996, 1997) by my school for excellence in academics & co-curricular activities and mathematics respectively

#### Distinctions

- Awarded the **exceptional performance** grade (AP) in **all four mathematics courses** at IIT Bombay (awarded to at most 1% of the students taking the course)
- Selected for the Visiting Students Research Programme 2003, at TIFR, Mumbai and the JNCASR Summer Research Fellowship, 2002
- **Topper in school consistently** in Classes I-IX and XI-XII

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### SELECTED TECHNICAL PUBLICATIONS & TALKS

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- Rajeev Agrawal, Mohit Garg, Gaurav Garg, Umesh Nimbhorkar, Prem Kumar and Vedavalli G. Krishnan, "A Method and System for a User Changeable Time Representation in Time Display Devices", **Indian Patent Application** Number 1346/CHE/2007, June 25, 2007.
- G. Kannan, Mohit Garg, U. B. Desai, and S. N. Merchant, "MPOE Prefiltering with Statistical Channel Model for DS-CDMA Systems", **IEEE International Conference on Communications**, Glasgow, UK, Jun. 2007, pp. 2822-2828.
- Mohit Garg, Umesh D. Nimbhorkar, U. B. Desai and S. N. Merchant, "Efficient Minimum Probability of Error Demodulation for DS-CDMA Systems", **IEEE Wireless Communications and Networking Conference**, Vol. 1, Mar. 2005, pp. 261-266.

(Detailed list and PDFs available at <http://mohitgarg.vectorstar.net/learn/publications.html>)

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### ACADEMIC RESEARCH & DEVELOPMENT

(\* indicates group projects)

#### Research

*Projects involving significant research component*

- **Multi-user Signal Processing Techniques for DS-CDMA Systems**: Developed and simulated two algorithms for pre-filtering at the base station on the downlink of a multi-user mobile network. Modeled the complete statistics of the wireless channel process to reduce the information required at the base station. Under publication and being extended by a PhD student as his thesis. (May 2004-Jun. 2005)
- **Clustering in Ad-Hoc Networks**: A completely new algorithm was proposed as a part of the work. Developed an entirely new mathematical model for a generalised clustering framework for Ad-Hoc Networks. (May-Nov. 2003)
- Detailed study of **Congestion Control** algorithms for **Wireless Networks\***. A power control strategy to study TCP over wireless was simulated using MATLAB. (2004)

(PDFs available at <http://mohitgarg.vectorstar.net/learn/publications.html>)

#### System Development

*Design and development of embedded systems and software*

- **A Remote Sensor Monitoring System\***: The system allowed any analog or digital data to be transferred to the internet in real time and provided user interactivity at the website end. Designed and developed a general purpose module to provide *Bluetooth V1.1* compliant functionality to any sensing device. The code for the upper layers of the Bluetooth Stack was written from scratch. Optimised and demonstrated for a real-time ECG application. (Jan.-Dec. 2003) (<http://mohitgarg.vectorstar.net/find/bluetooth.html>)
- A C++ based **Barcode Reader\*** for scanned images. Worked well for actual images of our university Identity Cards. (2001)

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### ACTIVITIES & INTERESTS

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- Co-founded **Coalition to Uproot Ragging from Education (CURE)** in 2001 – the first and only organisation dedicated solely towards campaigning against ragging in Indian universities. We worked closely with the Union HRD ministry & the Raghavan Committee which recently submitted its recommendations to the Supreme Court of India. CURE research has been extensively quoted in the media. (<http://www.noragging.com>)
- Served as the **Dept. General Secretary** of the Electrical Dept., IIT Bombay for 2004-05. Revived the long defunct student body and organised student activities, lectures & workshops.
- **Overall Coordinator "Aagomani 2004"**. Conceptualised and initiated this series of annual workshops at IIT Bombay. Attracted participation from more than 350 students and professionals from all over the country with a budget exceeding Rs. 3 lakhs. (<http://www.ee.iitb.ac.in/eesa>)
- Enjoy reading Hindi literature, writing Hindi poems and listening to Hindustani Classical Music. (<http://mohitgarg.vectorstar.net/think/thoughts.html>)