

# Manas Bajaj

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- **Objective**

I am seeking a full time position in the realm of Engineering Information Management, Product Life-Cycle Management, Systems Engineering, Computer Aided Design and Engineering (CAD/E), and Technology Management.

- **Academic Qualification**

1. *PhD* (May 2006 expected), Mechanical Engineering, Georgia Institute of Technology  
*Major GPA: 4.0 / 4.0, Minor GPA: 4.0 / 4.0*
2. *MS* (May 2003), Mechanical Engineering, Georgia Institute of Technology  
*GPA: 4.0 / 4.0*
3. *BTech* (May 2001), Ocean Engineering and Naval Architecture  
Indian Institute of Technology, Kharagpur (WB), India  
*Department Rank: 1, GPA: 9.27 / 10*

- **Industrial Experience**

1. InterCAX LLC (*Part-time co-op, Jan 3<sup>rd</sup> 2005 – May 15<sup>th</sup> 2005*)  
<http://www.intercax.com>
2. IBM Extreme Blue Intern (*Summer 2004*)  
Team: *PLM Possible*  
Topic: *Diagnostics for Open-Standards based PLM*
3. Rockwell Collins, Inc., Cedar Rapids, Iowa, USA (*Summer Intern, May-Aug 2003*)  
*Simulation for Flexible Manufacturing Project*
  - a. Design-for-Manufacturability evaluation for avionics product families
  - b. Avionics design representation and enrichment using STEP AP210
4. Mazgaon Docks Ltd., Mumbai, India. (*Summer Intern, May-July 2001*)
  - a. Passenger space allocation for a cruise ship
  - b. Hydrostatic computations for a barge
  - c. Dry-docking principles for repairing damaged ships
5. Hindustan Shipyards Limited, Vizag, India. (*Short Term Practical Training, December 2000*)
  - a. Design and manufacturing processes in shipyards
  - b. Applications of Group Technology.

- **Teaching Experience**

1. Teaching Associate for *Modeling and Simulation in Design (ME8813)*, Spring 2005, Georgia Tech
2. Teaching Associate for *Engineering Graphics and Visualization (ME 1770)*, Fall 2002, Georgia Tech

- **Research Interests**

My research work at the [Engineering Information Systems Lab](#), Georgia Tech involves the following:

1. Engineering Knowledge Management and Information Modeling for next generation PLM Frameworks
2. Standards-based analysis templates for simulation-based design
3. Design and Analysis Integration, DFX (X: Manufacturing, Testing, Assembly, etc.) Analysis
4. Expert Knowledge-Based Systems
5. Engineering Information Modeling standards (ISO STEP standards, UML, etc.)

- **Current and Recent Research Projects**

1. Semantic Framework for Distributed Simulation, Sandia National Labs
2. [AP210-based PCB Stackup Design and Warpage Analysis](#), NIST
3. [Information Technology and Knowledge-Based Engineering for Enhanced Electronics Manufacturing](#), Rockwell Collins Inc.
4. [Capturing Design Process Information and Rationale to Support Knowledge-Based Design and Analysis Integration](#), NIST

- **Undergraduate Research Projects**

1. An Integrated Shipbuilding Market Forecasting Method (BTech Thesis topic)
2. Designing the Container ship, “The Unsinkable”
3. Simulation of Stability Analysis of Hydrofoil Crafts
4. Lines Plan generation of a Catamaran-cum-Hydrofoil Craft
5. Generation of an efficient hull-form using “Shipflow”, a CAD and CFD based package.

- **Publications**

1. Bajaj, M., Peak, R., Wilson, M., Kim, I., Thurman, T., Benda, M., Jothishankar, M.C., Ferreira, P., Stori J. (July 16-18, 2003) [Towards Next-Generation Design-for-Manufacturability \(DFM\) Frameworks for Electronics Product Realization](#). *Best Paper Award for Session 210*, IEMT, Semicon West 2003, San Jose, California.
2. Bajaj, M., Fulton, R., Peak, R., (September 2-6, 2003) *Customizing Next-Generation Multidisciplinary Product Realization Frameworks*. CIE, ASME International 2003 DETC, Chicago, Illinois.
3. Zwemer, D., Bajaj, M., Peak, R., Thurman, T., Brady, K., McCarron, S., Spradling, A. Dickerson, M., Klein, L, Liutkus, G., Messina, J. (to be presented: May 10-12, 2004) *PWB Warpage Analysis and Verification using an AP210 Standards-based Engineering Framework and Shadow Moiré*. EuroSimE 2004, Brussels, Belgium.
4. Peak, R. S., Bajaj, M., Wilson, M., Kim, I., Thurman, T., Benda, M., Jothishankar, M.C., Ferreira, P., Stori, J., Mukhopadhyay, D., Tang, D., Liutkus, G., Klein, L. (April 7-9, 2003) [Enhancing Design-for-Manufacturability Using the ISO 10303 Standard for Electronics Design: AP210](#). Aerospace Product Data Exchange (APDE) Workshop, NIST, Gaithersburg, Maryland.
5. Matsuki R., Peak R., Zeng S., Wilson M., Kim I., Bajaj M. (2002) [Design-Analysis \(Thermal and Mechanical\) Integration Research for Electronic Packaging](#), SEMICON, Japan.
6. Russell Peak, M. W., Injoong Kim, Nsikan Udoyen, Manas Bajaj, Greg Mocko, Giedrius Liutkus, Lothar Klein, Mike Dickerson (2002). *Creating Gap-Filling Applications Using STEP Express, XML, and SVG-based Smart Figures - An Avionics Example*. NASA-ESA Workshop on Aerospace Product Data Exchange ESA/ESTEC, Noordwijk (ZH), The Netherlands.

- **Awards and Achievements**

1. Elected for *Who's Who Among Students in American Colleges and Universities*, 2005
2. [Best Paper Award, Session 210, IEMT Semicon West 2003 conference, San Jose, California](#)
3. Best Project Award, 2001, Department of Ocean Engineering & Naval Architecture, Indian Institute of Technology, Kharagpur, India.
4. The President of India Medal for the 1<sup>st</sup> ranked student, 2001, Department of Ocean Engineering and Naval Architecture, Indian Institute of Technology, Kharagpur, India.
5. Dr. J.C. Ghosh Memorial Award for the most outstanding student, 2001, Department of Ocean Engineering & Naval Architecture, Indian Institute of Technology, Kharagpur, India.
6. Scholarship endowed by the Lloyds Register of Shipping, UK for the 1<sup>st</sup> ranked student, 2000-2001, Department of Ocean Engineering & Naval Architecture, Indian Institute of Technology, Kharagpur, India.
7. Scholarship endowed by The J.N. Tata Endowment, 2001, Mumbai, India.
8. Honorary Mention for scoring semester GPA of 10.0 /10.0 in fall 2000 by The Director, Indian Institute of Technology, Kharagpur, India
9. Cumulative GPA 9.27/10.0 (undergraduate) - highest in the last decade (1991-2001), Department of Ocean Engineering & Naval Architecture, Indian Institute of Technology, Kharagpur, India.
10. Successfully underwent the STEP EXPRESS training at PDES Inc. offsite meeting, Asheville, NC, March 16-17, 2002.

- **Computer Skills**

1. Languages
  - a. Programming Languages- Java, C, C++, SQL
  - b. Markup Languages - XML, HTML
  - c. Expert System Languages- Kappa, CLIPS, JESS
  - d. Information Modeling Languages - STEP EXPRESS (Part 11- ISO 10303), UML
2. Software suites
  - a. CAD, CAE - AutoCAD, Solid Edge, Pro/Engineer, ANSYS, Mentor Graphics Board Station (PWB Design Suite), EAGLE (PCB Schematic and Layout design package), MATLAB, Mathematica, iSIGHT
  - b. STEP (ISO 10303) - EXPRESSO, EDM tool suite (Product data modeling using STEP), AP233 PBR and TBR Demonstrators (System requirements modeling using STEP AP233)
  - c. Tool Integration suite – ECLIPSE

- **References** – *available upon request*