

# Ashutosh Shukla

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## Objective

A full time position as a software developer working on challenging projects in the field of Computer Science.

## Education

- University of Wisconsin-Madison  
M.S. in Computer Science *Fall 2005 - Present*  
GPA – 4.0/4.0  
Courses:  
Advanced Computer Networks (A)  
Advanced Computer Architecture (A)  
Topics in Database Management (A)  
Mobile and Wireless Networking (A)  
Advanced Operating Systems  
Computer System Modeling Fundamentals
- Birla Institute of Technology and Science, Pilani, India  
B.E.(Hons.) Computer Science *August 2001 - June 2005*  
GPA – 9.79/10.00  
Departmental Ranking – 4

## Experience

- **NEC Laboratories America Inc., Princeton, NJ**  
*Research Intern, June 2006 – August 2006*  
**Project Title: Location-dependent Data dissemination in Vehicular Networks**  
*Project Description:* The project aimed at designing and developing a novel mechanism to disseminate location constrained data like alert messages, advertisements and weather and traffic information to vehicles using the roadside DSRC infrastructure.
- **Yahoo Software Development India Pvt. Ltd., Bangalore, India**  
*Co-op, Jan 2005 – June 2005*

**Project Title: Development and Setup of WAP server for Yahoo! Mobile**

*Project Description:* The project involved the development and deployment of WAP server for Yahoo! Taiwan enabling mobile users to access the contents of Yahoo! TW on their handheld devices. Xhtml or wml pages were served by the server depending upon the device capability. Issues related to customer billing and internationalization were dealt with.

- **University of Wisconsin –Madison, WI, USA**  
*Teaching Assistant* September, 2006 – present  
Introduction to Computer Networks  
  
*Teaching Assistant* September, 2005 – May, 2006  
Introduction to Programming

## Projects

- ***Query Compression for Efficient Data Filtering in Sensor Networks***  
The project proposes and evaluates a scheme for compressing queries so that they can reside on the limited storage of the sensor motes. This enables filtering of data at the motes reducing the traffic on the network and increasing its life.
- ***Towards Robust Localization Using ‘Wireless Congruity’***  
The project proposes and evaluates a novel localization technique based on the property that the patterns of wireless transmissions received by two nodes exhibit significant correlation to the nodes’ spatial separation.
- ***Load Balancing in Large-Scale RFID Systems***  
The problem of balancing RFID tags among multiple readers is addressed. Centralized and Localized mechanisms for solving this problem are proposed and evaluated through simulations.
- ***Automated Access to Parking lots using Passive RFID Tags***  
The project aimed at designing and implementing an RFID based system for providing automated access to vehicles having passive tags to parking lots.
- ***The Case of Large Issue Buffers in Superscalar Processors***  
This project debunks the publication “A large, Fast instruction Window for Tolerating Cache Misses” by showing that similar speedups can be achieved by increasing the size of the reorder buffer as by having large issue buffers.
- ***Design of a Pointing Device for Multimedia Projector***  
The project involved the design of a pointing device for a multimedia projector which would give full control to the user over the motion of the mouse pointer and perform all the basic functions of a mouse.

- **The Litec Mouse – A Surface-free Cordless Mouse**

The project involved the development of a handheld, cordless mouse that would neither be constrained by a surface like the ball and optical mice nor would need the physical contact of the user like a touch pad.

## Publications

- **Load Balancing in Large-Scale RFID Systems**  
Under submission to IEEE Conference on Computer Communications (IEEE INFOCOM – 2007).
- **Towards Robust Localization Using ‘Wireless Congruity’**  
Under submission to Passive and Active Measurement Conference - 2007.
- **Packet Classifiers in Ternary CAMs Can Be Smaller**  
International Conference on Measurement and Modeling of Computer Systems ACM SIGMETRICS-2006), Saint-Malo, France.
- **Error Analysis in Reconstruction of a Parabola in 3-D from two arbitrary perspective views**  
Vision Geometry XIII IS&T/SPIE International Symposium, Electronic Imaging 2005, San Jose, California.

## Skill Set

<i>Programming Languages</i>	C, C++, x86 Assembly Programming, Verilog HDL
<i>Scripting Languages</i>	Shell Programming
<i>Operating Systems</i>	Windows 98/NT/XP, Linux, Unix
<i>Databases</i>	Oracle, SQL, PL/SQL

## Awards & Honours

- Ranked among top 2% of the batch of 2001 of BITS, Pilani.
- Secured 1st rank in the country in Indian School Certificate Examination, 2001.
- Stood 1st in the Uttar Pradesh State Merit List of Indian Certificate of Secondary Education Examination 1999. (10th Standard).
- Awarded the National Talent Search Examination Scholarship-'99 organized by NCERT, Govt. of India.
- Won the 2nd Prize for the Best Working Model in APOGEE – 2003, an all India academic fest.