

DEEPTI AGRAWAL

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Areas of Interest

Network Security, RFID Middleware, e-Commerce

Education

- Currently pursuing M.Tech Information Technology, KReSIT, IIT Bombay
 - CPI (till 3rd Semester) : 9.34/10
- B.Tech (Information Technology) from Amity School of Engineering & Technology, IP University, New Delhi, 2004.
 - CPI : 8.5/10

MTech Thesis Project

- **RFID Security**
 - Radio Frequency Identification (RFID) is an emerging technology for mass object identification. However, the ability to uniquely identify a tag enables easy traceability of persons and goods thereby raising privacy concerns, especially due to low cost and resource limitations of RFID tags. In this thesis, we explore the security and privacy issues in RFID systems, do a comparative study of mechanisms to counter these, and propose improved protocols to protect user privacy in different RFID based applications.
 - **Advisor** : Prof. Bernard L. Menezes

Other Projects

- **E-Mail On SMS(EMOS) : An Intelligent E-Mail Alert System for Mobile Devices**
 - Designed and implemented a low cost, customizable and intelligent multiuser system to enable clients to get e-mail alerts on their mobile devices through SMS, initially targetted for KReSIT department of IIT Bombay. This was done using a simple mobile phone coupled to a linux system that acted as a mobile server. We used machine learning algorithms and domain knowledge to intelligently filter spam, prioritize messages and apply message compression to optimize it for resource constrained mobile devices. This was developed as a semester project in Systems Lab.
- **Seminar on Enterprise Security - MTech Seminar**
 - Various security issues that arise in enterprise applications, and how they are dealt with in the J2EE security model at the EJB Tier and the Web Tier were studied as part of this seminar. Use of Aspect Oriented approach for providing application security was also investigated.
- **Alert Correlation System**
 - Designed and implemented an alert correlation system as a Data Mining course project. It featured implementation of clustering and association rule mining algorithms to group and correlate alert data in Intrusion Detection Systems (IDS's) and find meaningful information from it. It was developed using WEKA. It was applied on live datasets obtained from IDSs at CDAC.

- **xSpace : A Tuple space for XML Documents**
 - This project funded by L & T Infotech. xSpace is a distributed associative shared memory. It is a web service that can be used by various applications running on heterogeneous platforms, to share XML documents with each other. My contribution was the implementation of the Storage Engine Module for XML documents as a Object Oriented Techniques course project.
- **Weak Keys in Diffie Hellman Protocol**
 - The Diffie Hellman protocol allows two users to exchange a secret key over an insecure medium without any prior secrets. The project involved a study of some of the attacks and vulnerabilities in the Diffie Hellman Protocol. This was done as part of Network Security course project.
- **Corporate Travel Management Solution**
 - Designed and implemented a portal for managing all travel related bookings(airline/railways/hotel) at a single site. This was developed as BTech project using J2EE Technologies-JSF, EJB , JSP.
- **M-Lingo : A J2ME Application for Multilingual SMS in Mobile and Handheld Devices**
 - Designed and implemented a J2ME based application to support multilingual SMS. This enables user to send/receive SMSs in Hindi (with extension points for adding more to the supported languages set), even if Unicode based fonts are not supported on the mobile device. This was developed during Industrial Training at Siemens Information Systems Ltd., Gurgaon.

Invited Talks

- Invited Talk at DEP program at IIT Bombay on **RFID Security**.

Other Experiences

- **Teaching Assistant for Systems Lab**
 - As a TA, I managed and shepherded the development of a tool suite to aid architecture driven development. The project was completed by a class of 46 students under the guidance of Prof. Paul Clements (Software Engineering Institute, Carnegie Mellon University)
- **Teaching Assistant for Network Security**
 - As a TA, did a background study on varied topics in network security. This encouraged interesting course projects by the students ranging from intrusion detection systems to RFID security.
- **Webteam Member**

Being part of webteam for one and half year, got hands on experience on working with various web technologies. The team was responsible for keeping the department website updated, and to provide automated interfaces for various workshops, techtalks, seminars etc.

Honors

- University Gold Medallist in B.Tech.
- Cleared GATE Examination in 2004 with 98.56 percentile.
- Award Certificate from C-DAC India for being among the top 1% to qualify in Competence in Software Technology -2004 G Level Examination.
- Certificate of appreciation from IBM for participating in 'On Demand Learning Initiative' - A series of Workshops on the use of IBM Technologies
- Won 2nd prize in Technical Quiz at Eureka 2002, Annual Technical Fest at Bharati Vidyapeeth, New Delhi
- Won 2nd prize in Sprint(On the Spot Programming Competition) at Amitech 2002, Annual Technical Fest at Amity School of Engineering and Technology, New Delhi

- Won 2nd prize in Rectifier(Circuit Correction competition) at Amitech 2002, Annual Technical Fest at Amity School of Engineering and Technology, New Delhi
- Yogeshwar Dayal Scholarship Award for being Academic Topper in Class IX and XI
- Represented college at Inter Amity Sports Meet in Chess, Badminton - 2003 and 2004.

References

- Prof. Bernard L. Menezes

Professor,
Kanwal Rekhi School of Information Technology,
IIT Bombay, Powai, Mumbai - 76

- Prof. Anirudha Sahoo

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Declaration

I hereby declare that all the information provided above is true and upto date.

Deepthi Agrawal