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EDUCATION

University of Pennsylvania (School of Engineering and Applied Sciences), Philadelphia, PA Jan 2012 – Dec 2013
- Master of Science in Engineering, Computer and Information Science. GPA: 3.47/4.00
- Spring '13 Coursework: Internet & Web Systems, Data Mining for Business Intelligence.
  Completed Coursework: Database and Information Systems, Computer & Network Security, Computer Architecture, Analysis of Algorithms, Distributed Systems, Networked Systems, Independent Study under Professor Boon Thau Loo.

Guru Gobind Singh Indraprastha University, New Delhi, India Aug 2007 – Jul 2011
- Bachelor of Technology, Computer Science and Engineering.
- Program Coursework: Operating Systems, Database Management Systems, Design of Algorithms, Software Testing, Software Engineering, Computer Security, Compiler Construction, Object Oriented Software Engineering, Computer Architecture.

SKILLS

- Programming Languages: Java, C, C++, HTML, SQL, Oracle, JavaScript, CSS, jQuery, PHP
- Technologies: JUNOS api, Wireshark, Network Simulator-3

PROFESSIONAL EXPERIENCE

Part Time Programmer, University of Pennsylvania (Graduate Student Center) Dec 2012 – Current
- Built and maintained the web portal (http://www.gsc.upenn.edu/) for University Graduate Center using **PHP** and **MYSQL** database.
- Developing the mobile portal using **jQuery-mobile** and **media-queries** for better mobile user experience.

Research Assistant, University of Pennsylvania (NetDB@Penn) May 2012 – Aug 2012
- Modified Rapidnet (a declarative toolkit for rapid implementation, simulation and experimentation of network protocols) to compile it on FreeBSD operating system, making it possible to compile Rapidnet on Juniper routers.
- Researched on how to make a compiler in NDlog (recursive query language developed at UC Berkeley) that would write a Rapidnet application into the control plane of a JUNOS application package, which could be used to code a JUNOS application via Rapidnet.

Research Intern, Defense Research and Development Organization (DRDO), New Delhi, India Jun 2010 – Aug 2010
- Worked as a member of the ISSA (Institute of System Studies & Analysis) for research on "Content Management in Heterogeneous Systems" regarding integrity of data transfer and privacy of session for a heterogeneous system in Microsoft Virtual PC.

COURSE PROJECTS

Olympics Premier League – Online Gaming Application Fall 2012
- A web-based gaming application using **JAVA** and **MYSQL** that allows users to make their login profiles and teams from a large dataset of Olympics athletes to compete against each other.
- Implemented indexing and caching to optimize database querying.

PennSearch – A Distributed Hash Table based Search Engine Spring 2012
- A peer-to-peer keyword-based search engine in **C++** that uses an implementation of Chord Distributed Hash Table.
- Programmed Link State, Distance Vector and Path Vector routing protocols.
- Created a Chord DHT as overlay network over Optimized Link State routing protocol on NS-3 Network Simulator.

DChat – Distributed chat server Spring 2012
- A distributed group chat application in Linux using **C++** sockets that supports total ordering of messages in real-time, security and fault tolerance mechanisms such as heart beat messages, queuing, encryption and leader election.
- Implemented a fully ordered TCP-like multicast protocol over UDP.

Intrusion Detection System Spring 2012
- Created a tool in **JAVA**, which is capable of monitoring traffic to or from a single host on network.
- Captured the packets for tcp/udp connection and reconstructed tcp stream out of it.
- Created a lexical parser that would read a rule file written in a specific grammar and apply the rules against reconstructed tcp stream to detect attacks.

Secure Distributed Banking Spring 2012
- A model ATM-Bank architecture in **JAVA** offering authenticity, confidentiality, integrity & safety against most of man-in-middle attacks.
- Used symmetric (DES) & asymmetric (RSA) cryptographic techniques with SHA1 hashing to simulate secure Bank-ATM connection.

EXTRA CURRICULAR PROJECTS

Rubik's Cube Decipher May 2011 – Nov 2011
- Developed an automated robotic machine to solve a 3x3 Rubik's Cube.
- Wrote a **C++** program which converted data input from a camera (**JAVA**) into firmware specific **Assembly Language**.
- Constructed a mechanical structure using motors and 8052/8086 microcontroller that would physically solve the Rubik's cube.

CREDENTIALS/ACTIVITIES

- Teaching Assistant for graduate level 'Distributed Systems' course and undergraduate level 'Database Management' course.
- Oracle Certified Professional Java Programmer, 2011.
- Won the overnight programming hackathon at university TechFest 'Anugoonj' for the year 2010.