Siddhi S. Soman

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Objective:

Application for **a research assistantship** in order to successfully apply my knowledge and technical abilities to help further ongoing research.

Educational Background:

- Masters in Computer Science (Information Analytics and Management, Security)
  Stanford University.
  Expected Graduation Date - June 2012.
  CGPA – 3.61 on a scale of 4.
- Bachelor of Technology in Information technology in June 2010
  College of Engineering Pune.
  CGPA – 9.38 on a scale of 10.

Research Projects:

1. *Rendezvousing at third party storage services:*
   - Included providing Tor access to a client in a censored region using a difficult-to-block channel of communication like Amazon Web Services, Google Docs etc.
   - Clients can use this channel to obtain bridge addresses or exchange information needed to set up a higher bandwidth connection.
   - Clients can even use this channel to (very slowly) browse the Web, in the case that all other attempts at connectivity fail.
   - Url : http://crypto.stanford.edu/cs294s/

2. *Security Analysis of IPv6 Mobility :*
   - Project included analysis of the IPv6 mobility protocol.
   - Found a number of attacks on the IPv6 Mobility, including Man-in-the-Middle, DDoS, and DoS. Also proposed fixes for these attacks.
   - Url : http://www.stanford.edu/class/cs259/WWW11/

Work Experience :

1. *DASH [June 11 - Present]:*
   - Ongoing project as part of Summer Internship at **Qualcomm**.
   - Includes working on Qualcomm's Dynamic Adaptive Streaming over HTTP (DASH) solution.
   - Worked on the parser, adding multiple segment and template support, resource optimization techniques, analysis wrt to AV input etc.

2. *Research Assistantship [March 11 – June 11]:*
   - Worked as a Research assistant at **Stanford University** with **Prof. Dan Boneh**. Worked on projects related to internet freedom, anti censorship and secure voting.

3. *Transient Multimon Manager and Persistence File Converter[Aug 09 – May 10]:*
   - Completed the project as part of a one year internship with **NVIDIA**.
   - Enhanced the usability and scalability of the Transient Multimon Manager (TMM) to allow Windows Vista users to traverse through multiple displays with ease.
   - Implemented TMM Interposer to support persistence between NVIDIA and Intel GPUs.
   - Implemented the Persistence File Converter to convert persistence data from the old format in files to the new format in the registry in case of overinstall scenario.

4. ***Proxy Anti Virus*** *[July 09 – Aug 09]:*
   - Part of the team associated with a project conducted as part of the **IBM Remote Internship program.** Project concerned with the proxy anti virus which allows an infected file to be blocked while downloading from the browser itself.

Academic and Other projects:

1. ***Security projects:***
   - Implemented functionality on top of Twitter that allows encryption and decryption of tweets for particular groups etc. Also part of the project was authentication and detecting whether tweets have been tampered with.
   - Project on launching an MITM attack on SSL.
   - Implementing secure voting mechanisms, several encryption and watermarking techniques.
   - Implementing different security attacks like buffer/integer overflows, double free, format string attacks, global offset table, phishing, CSRF, XSS along with packet analysis.

2. ***Mobile Applications: (Independent Project)***
   Part of the team that developed several mobile applications like the Issue Handler for workers on the shop floor, language translator for several users. Tried to market the product ourselves.

3. ***Other projects:***
   - Simulation of a virtual shipping network using the notification/reactor mechanism.
   - Implemented several small projects related to database management, multimedia techniques and human computer interaction (Admission Database, historical websites, Media Player, various applications, algorithms, protocols etc), suggesting an innovative solution for traffic congestion problem using the Web 2.0 and RII technology.

Technical Skills:

Programming Languages: C, C++, Java, SQL , Visual Basic, PL-SQL, Haskell, VC++, J2ME, modeling languages like Murphi, Alloy.
Web and scripting technologies: JavaScript, JSP, CSS, Perl, DHTML.
Other skills: XML, Win32 APIs, Apache server, database management.

Key Coursework:

   Graduate: Computer and Network Security (CS155), Cryptography(CS255), Security Analysis of Network Protocols(CS259), Research projects in Security(CS294S), Database Systems(CS245), Parallel and Distributed Data Management(CS347), Programming Languages(CS242), Object Oriented Programming (Modeling and Simulation approach)(CS249A), Algorithms in Biology(CS374).
   Undergraduate: Database Systems, Operating Systems, Computer networks, Information Security, Unix Programming, Information Retrieval, Data Structures and Files, Discrete Structures and Graph Theory, Probability,Theory of Computer Science, Software Engineering, Software Testing and Quality Assurance, Computer Graphics, Human Computer Interaction, Multimedia Techniques, Distributed Systems etc.

Extracurricular activities:

   - Part of and headed several committees in my undergrad (Computer Science – AIWars, Paper Presentation (technical festival), Boat Club and Regatta Managing Committee, Zest Managing Committee(Sports Festival), College Magazine Managing Committee etc).
   - Participated and won in various rowing (national), badminton (state and national), debating competitions etc. Taken part in various social activities (Poona Blind Men's Association, Peace March against terrorism, Save our hills etc).
   - Learnt German as a foreign language in high school and college.
   - Good team player and have good communication and interpersonal skills.
   - Believe in continuous learning and employing an innovative approach.