

Romanch Agrawal

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Profile

A Research Scholar with experience in static program analysis and applying it to malware analysis and detection. For my research, I designed novel techniques to detect previously unknown malware and identify similar programs based on their behavior.

Education

- **M.S. by Research in Computer Science and Information Security**
International Institute of Information Technology, Hyderabad.
Expected May 2010,
CGPA on scale of 10: 8.8
- **B. Tech (Computer Science and Engineering)**
Shri Ramswaroop Memorial College of Engineering and Management, Lucknow.
Completed June 2007,
Percentage: 75.81
- **Senior Secondary**
Seth M.R. Jaipuria School, Lucknow.
ISC Board (2002 - 2003) with 82%

Research Experience

- **Research Scholar at Center for Security, Theory and Algorithmic Research (C-STAR) at IIIT-H.**
(2007 – Present)
Research Topic: “Signature Generation of Malware Families”
Related Publication: Romanch Agrawal, B. Bruhadeshwar, V.S. Sathyanarayan, “**Static Program Behavior Tracing for Malware Detection and Program Classification**”, under review ASIACSS 2010.

Teaching and Professional Experience

- Teaching Assistant for Advanced Problem Solving course at IIIT-H.
(Monsoon 2008, Monsoon 2009)

- Teaching Assistant for Information Security: Audit and Assurance course at IIIT-H. (Spring 2009)
- System Administrator for Center for Security, Theory and Algorithmic Research (C-STAR) at IIIT-H. (May 2009 – Present)
 - Maintaining a network of one server and about 40 clients using NFS and LDAP/SSL.
 - Hardening the server using *iptables*.
 - Routine security audit of network and the server.
 - Maintaining users and groups and assigning them privileges.
 - Assigning disk and print quotas.
 - Patching and updating server software.
- Reviewer, International Conference on Distributed Computing and Networking (ICDCN), 2009.

Relevant Courses

Information Security: Audit and Assurance, Research in Information Security, Mathematical Foundations of Information Security, Cryptography and Network Security, System and Network Security, Machine Learning.

Projects

- **Static Program Behavior Tracing Tool for Malware Detection and Obfuscation Validation**
 - Includes backward tracing algorithm and longest common sub-sequence algorithm implementations
 - Includes a home-grown obfuscation tool to validate results
- **API Call Frequency Based Malware Detector**
 - Software that can characterize programs based on critical API call frequency and detects malware in scanned files.
 - Includes API call extraction and statistical analysis (implemented as plug-in for IDA pro disassembler)
- **Distributed SNMP for Effective Network Monitoring (Prof. Kishore Kothapalli)**
 - This project considers the implementation of a distributed network monitoring tool that reduces the overhead and complexity of network monitoring.
 - Developed in Java.
- **Sort - Merge Join using External Sorting (DBMS Course Project)**
 - Developed in C++.
- **The Tank Arcade (IT Workshop Project)**
 - Developed the game Tank using C++ and OpenGL API.
- **The College Portal (B. Tech Project done under Mr. Ritesh Khanna)**
 - Developed a common portal for all colleges, so that they could advertise about the college.
 - Designed and developed in Adobe Flash and Microsoft .NET, also using MS SQL Server. It was awarded as the second best project of our batch.

Skill Set

- **Disassemblers/Debuggers** : IDA Pro (including plugin writing), OllyDbg
- **Operating Systems** : Linux, Windows XP
- **Programming Languages** : C, C++, Java, x86 Assembly
- **Scripting Languages** : Shell, Perl
- **Database Management** : MySQL
- **Network Tools** : Nmap, Nessus, Wireshark
- **Program Analysis Tools** : Understand
- **Other Software and API's** : Adobe Flash, OpenGL

Activities

I like solving puzzles and brain teasers. I have good coding skills. I have keen interest in developing games. I am a fast learner.

End of Curriculum Vitae