

Savita Seetaraman

Résumé

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Objective

To pursue a research career in computer science and use it to solve real world problems and improve the society around me.

Work experience

- June 2016 – **Master thesis Student**, SAP SE, Walldorf, Germany.
- April 2017 Working on security of network (with applications running on Kubernetes clusters) hosted on Amazon Web Services.
- Dec 2015 – **Research Assistant**, Saarland University, Germany.
- Feb 2016 Working on Information Control Flow for Javascript in browsers

Education

- 2014 – **Dual Masters in Computer Science; Innovation and Entrepreneurship**, GPA - 1.3 (5 - 0 scale).
- Present 1st year 2014 University of Trento, Italy; 2nd year 2015 Saarland University, Germany.
- July 2010 – **Bachelor of Technology in Computer Science and Engineering**, Amrita University, India. CGPA - 9.3/10, (among the top 4 % in my batch of 120 students).
- June 2014

Awards & Achievements

- June 2016 Selected as **Google Anita Borg Scholar 2016**.
- August 2015 Team invited to participate in **Virginia Tech Knowledge Works Global Week** at Virginia Tech University, USA.
- Dec 2013 **Won Random Hackness of Kindness** hackathon contest conducted by University of Trento, Italy.
- July 2013 **Invited** to attend 22nd **USENIX Security Symposium 2013**, Washington D.C., USA.
- Jun 2013 **Erasmus Mundus India4EU scholarship** for 10 month student exchange during bachelor's final year.
- Jun 2013 **Tel Aviv University scholarship** for 1 month summer school on **Business Entrepreneurship** in Israel.
- May 2012, Received the **Award of Appreciation** by Amrita University for technical achievements in the years 2012 and 2013.

Internships

- July 2015 – **Student Intern**, **INRIA**, French Institute for Research in Computer Science and Automation.
- October 2015 Work during the internship was to benchmark various **network virtualization** platforms.
 - Conducting a literature survey on the platforms that could be used for network virtualization.
 - Mounting the platforms on Xen hypervisor as domains and configuring a bridge network for the platforms.
 - Designing and setting up a non-biased firewall benchmarking scenario for each platform.
 - Automating the entire process of setting up environment, carrying out benchmarking tests for each platform, plotting results on graph.
- July 2014 – **CERN Openlab 2014 Student Intern**, *Center for European Nuclear Research*, Geneva, Switzerland.
- Sept 2014 Work at **Computer Security Team** was finding vulnerabilities in PVSS software by penetration testing.
 - Learning about PVSS software (German abbreviation for Process Visualization and Control Systems).
 - Connecting to a remote instance of the PVSS and finding vulnerabilities in it by penetration testing.
 - Finding the causes for the vulnerabilities and documenting them.
 - Giving a presentation on the project, which can be viewed [here](#).

April 2014 – **Student Intern, Google Summer of Code 2014, Google Inc.**

August 2014 Wrote a cache plugin for **Monkey HTTP server** in **C** and profiled server to test its performance. The project helped me strengthen my knowledge in **computer networks**:

- Designed and proposed a structure for the cache plugin for the server.
- Implemented cache using hash table and min heap data structures.
- Adding system calls to map files to memory.
- Implemented a counter for calculating the cache statistics such as number of hits and misses.
- Performed server profiling to test performance of the server with and without caching plugin **Code**.

Selected Projects

Sept 2014 – **Anti-VM Malware Deception Project.**

May 2015 As a part of research at University of Trento, emulated virtual environment on host to deceive malware as to being run on a virtual environment, so that they do not get triggered.

December **TCP/IP protocol stack.**

2014 Implemented the TCP Layer of TCP/IP protocol stack in C out of self interest to know its working.

November **Stream and Block cipher implementation.**

2014 As a part of Advanced Cryptography course, implemented E0 cipher (used in Bluetooth protocol) and SERPENT cipher (a type of AES Block cipher) in magma. **Link**

June 2014 **Penetration Testing on SchoolMate web portal.**

As a part of Security Testing course at University of Trento, found vulnerabilities - XSS and SQL Injection, patching, and testing code again for presence of these vulnerabilities. Link : **SchoolMate**.

Publications

April 2013 **Preventing Buffer Overflows using GDB**

Published in **OPEN SOURCE FOR YOU magazine**, Asia.

Outline: The article aims to create awareness about secure coding practices to prevent buffer overflows vulnerabilities. It explains what a buffer overflow is, includes a simple demonstration on how to prevent buffer overflows while coding and contains an introduction to the GNU Debugger which is used while detecting and preventing buffer overflows.

Dec 2011 **R NET - Empowering Rural India Using Cloud Technology**

Authors **Savita Seetaraman**, Sowmya Ravidas, Sreepriya Chalakkal.

Published at **INSCRIBE**, a student conference conducted by Robert Bosch, Bangalore, India. (Selected from among 200 submissions).

Outline: We presented a cloud based infrastructure to impart education to the rural Indian population. Our system, builds on the benefits provided by cloud computing in providing scalable services, centrally defining and managing courses, and imparting these courses to the rural population of India, with the use of Mobile Deployment Unit - special purpose automobiles equipped with relevant hardware.

Open Source Contributions

February **Contributions to Monkey HTTP Project.**

2014 Learnt more about Linux system calls and server profiling to test the server's performance. **Link**

January **Contributions to E-cidadania.**

2013 Familiarised with Django, the Python web framework that helps builds MVC architectue web application. **Link**

April **Bug fixes in GNOME and Mozilla Firefox.**

- 2012
- To fix the bug in **Gnome**, the requirement was to activate the dash board plugin. **Link**.
 - To fix the **Firefox** bug, the Firefox source code had to be cloned from Mercurial and built, location of the error to be spotted in the large code base, fix and then patch it. **Link**

Computer Skills

Platforms GNU/Linux (Ubuntu, Fedora), Microsoft Windows, Mac OS

Databases MySQL, PostgreSQL, MangoDB, Oracle

Others \LaTeX , GIT, GDB, Wireshark

Programming C, C++, Java, Python, Shell Script, Magma

Container-ization Docker, Kubernetes, CoreOS