Prashant Rajput

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Education

- **New York University (NYU)** — New York, NY
  Ph.D. in Computer Science — *2018 - Present*
- **University of California Los Angeles (UCLA)** — Los Angeles, CA
  Master of Science in Computer Science — *2016 - 2017*
- **Savitribai Phule Pune University (SPPU)** — Pune, India
  Bachelor of Engineering in Computer Engineering — *2012 - 2016*

Technical Skills

- **Programming & Scripting Languages**: C++, Java, Python, Assembly Language (NASM), MySQL, UNIX Shell Scripts, JavaScript, and PHP.
- **Mark-up Language**: HTML and XML.

Professional Experience

- **Center for Cyber Security (NYUAD)** — Abu Dhabi, UAE
  Research Assistant — *Dec 2017 - Present*
  - Performed process aware security assessment of desalination plants to determine attack entry points.
  - Designed attack vectors while systematically categorizing the attacks and estimated corresponding financial loss.
  - Analyzing JTAG for detecting malwares in Linux based operating systems running on Programmable Logic Controllers (PLCs).
- **Ariento** — Los Angeles, CA
  Cyber Security Intern — *April 2017 - Dec 2017*
  - Customized and operated network security monitoring infrastructure with Amazon Web Services (AWS).
  - Performed security assessments and analysis using Security Onion to address client vulnerabilities.
  - Implemented new rules in OSSEC and Snort to detect suspicious behavior on client machines and networks.
  - Conducted penetration testing (ethical hacking) on client companies using Kali Linux.
- **Cuneiform Digital Library Initiative (CDLI)** — Los Angeles, CA
  Graduate Student Researcher — *2016 - 2017*
  - Develop digital library of cuneiform tablets to aid in the preservation and study of ancient languages by coordinating with University of Oxford, Max Planck Institute and UCLA.
  - Monitor performance & upgrade website by updating content and identifying and evaluating opportunities for improving site security.
  - Maintain & improve back-end organization of data and front-end accessibility for end-users.

Research Experience

- **Phish Muzzle** — Los Angeles, CA
  Advisor: Rafail Ostrovsky, UCLA — *2016 - 2018*
  - Proposed and developed a metadata based approach for defending against email spear phishing attack.
  - Extended Levenshtein Distance and MySQL queries for identifying suspicious emails.
  - Optimized the solution by reducing search space using additional MySQL query.
- **Automated NFV Deployment** — Los Angeles, CA
  Professor: Songwu Lu, Wireless Networking Group (WiNG) — *April 2017 - Dec 2017*
  - Developed a command line tool to automatically deploy OAI components using OpenStack.
  - Implemented automated scripts for OAI configuration based on user specified modular SLA files.
  - Introduced simple interactive functionality to deploy, delete and check status of the spawned VMs.

- **Design and Development of ASCII Transliteration Format (ATF) Parser** Los Angeles, CA
  Professor: Bob Englund, CDLI *April 2017 - Dec 2017*
  - Developed a parser to validate ATF texts using PLY in Python.
  - Enhanced and adopted the parser for online use by connecting PHP front with Python backend.
  - Implemented rules for automatically detecting structural and semantic defects in the texts.
- **Development of Android Application for CDLI Lab** Los Angeles, CA
  CDLI, Digital Humanities, UCLA *July 2017 - Oct 2017*
  - Designed and produced detailed specifications for the proposed CDLI Android application.
  - Implemented front-end and back-end for the application.
  - Improved applications performance by supporting batch download of meta data.
  - Adapted Androids Material Design to improve the aesthetics and functionality of user interface.
- **Secure Code Analysis** Los Angeles, CA
  Professor: Miryung Kim, Software Evolution and Analysis Laboratory *April 2017 - July 2017*
  - Proposed a novel technique to detect violations of secure coding techniques using abstract symbol tree in Java.
  - Extended Googles Error Prone to analyse the code for security vulnerabilities during compile time.
  - Detected vulnerabilities such as weak random number generation and return value ignored in open source projects.
- **Machine Learning for Cancer Treatment Prediction** Los Angeles, CA
  Professor: Ramin Ramezani, Center for Smart Health *April 2017 - July 2017*
  - Proposed a novel technique using clinical data for predicting best treatment option for cancer patients.
  - Implemented multiple machine learning techniques using TensorFlow and scikit library in Python.
  - Modified the algorithm to obtain an accuracy of upto 85%.
- **Software Development for Personal Cloud File Sync** Los Angeles, CA
  Professor: Songwu Lu, Wireless Networking Group (WiNG) *April 2017 - July 2017*
  - Implemented automated personal cloud system using Python.
  - Improved the software to incorporate SSL protocol for secure transfer of data.
  - Achieved significantly less meta data transfer by using delta based approach.
  - Shifted from master based architecture to semi-master based approach, where data is transferred peer-to-peer and master is used only for meta data transfer.
- **Breaking Location Stream Privacy** Los Angeles, CA
  Professor: Mario Gerla, Network Research Lab *Sept 2016 - Dec 2016*
  - Studied different neural network configurations for understanding its effect on location stream data.
  - Applied feed forward neural network for mobility pattern classification on location stream data.
  - Extended the solution to recurrent neural network for minimizing error to a maximum of 1.
- **Application for Preventing Runtime Information Gathering on Android OS** Pune, India
  Computer Division, Bhabha Atomic Research Centre (BARC) *2015 - 2016*
  - Designed and implemented 3 new Runtime Information Gathering (RIG) attacks targeting Android OS.
  - Implemented a solution for each RIG attack using behavior - based malicious application detection system.
  - Optimised the solution by 85% for better performance using multithreading in Java.

Honors & Awards

- Gold medallist for Computer Engineering 2012-2016, University of Pune.
- 1^{st} Runner-Up, Convene 2016 - 6^{th} Annual National Project Competition in the category of Information Security.
- 2^{nd} Runner-Up, Impetus & Concepts 2016 - 25^{th} Annual National Project Competition in the category of Network and Information Security.
- Outstanding Graduating Senior, Awarded by Cognizant Technology Solutions, 2016.

Publications

1. Ostrovsky R., Rajput P. "Phish Muzzle: The Fish Won't Bite", 2017, In preparation.
2. Rajput P., Sapkal P., Sinha S. "Box Office Prediction using Dual Sentiment Analysis", 2017, IJMLC, Volume 7 Number 4.