Niranjan Nagaraju

Contact Information

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Education

Visvesvaraya Technological University, PES Institute of Technology, Bangalore
Bachelor of Engineering, Computer Science **2002 – 2006**

Technical Skills

Languages: C(experienced), Python(proficient), C++(familiar), Haskell(hobby)
Tools: GDB, Vim, Emacs
Github Profile: **www.github.com/niranjan-nagaraju**

Professional Experience

13+ years of design and development experience in System Programming, Security, and TCP/IP Networking.

10Cosine Tech Solutions Pvt Ltd, IoT startup, Bangalore
Technology Consultant **October 2018 – Present**

Vivid Smart Home, IoT-based home automation solution

- Designed and developed initial prototypes for the backend web API and android application for an IoT-enabled smart-plug.
- Optimized spring-boot/mongodb based backend web API workflows for security and data-usage.
- Authored a python-based automation/testing framework to interact with the smart-plug and the backend web API.
- Optimized micropython-based firmware for the smart-plug to function in an ultra-low resource environment.

Pulse Secure, Bangalore
Software Engineer **December 2017 – August 2018**

Pulse Secure Desktop Client

- Worked towards integrating OPSWAT host-checker with the linux desktop client.

Juniper Networks, Bangalore
Software Engineer **October 2012 – November 2017**

IPS (Intrusion Prevention Systems) for Juniper's SRX series

- Switched IPS' security database backend from Berkeley-DB to SQLite3, fine-tuned performance to match Berkeley-DB.
- Integrated Intel's pattern matching engine, 'Hyperscan' into SRX-IPS, reducing the memory footprint of attack signatures by 30-40%.
- Ported IPS and SSL forward-proxy modules to Intel/Linux-based next-gen SRX devices.

RSA Security, Bangalore
Software Engineer **October 2010 – October 2012**

RSA Access Manager (AxM) Web Agents

- Performed a security audit of AxM Web agents using w3af/webscarab, Fortify and fixed critical security issues.
- Worked on extending AxM Web Agents to support Email-based RSA Adaptive Authentication, and Intersite Single Sign-On (ISSO) features.

Narus Networks, Bangalore
Software Engineer **June 2008 – March 2010**

Multi-threading processing layer, 'Logicserver', NarusInsight

- Worked on the development of an actor-based concurrent programming language for a redesigned NarusInsight's processing layer, 'Logicserver'.
- Profiling and performance tuning (using Oprofile and Valgrind) of the redesigned Logicserver component.

SQL Loader, NarusInsight

- Developed a NarusInsight component to load capture layer metadata into an SQL database using unixODBC library.

CoreEl Technologies, Bangalore
Design Engineer **July 2006 – June 2008**

TOE (TCP/IPv4/IPv6 Offload Engine)

- Implemented a virtual network device driver for a PCI-e based FGPA device emulating TCP/IP stack in hardware.
- Designed and developed a dual network-stack architecture that enables switching between TOE and the Linux TCP/IP stack.
- Implemented ICMPv6 NDP (Neighbor Discovery Protocol) and MLD (Multicast Listener Discovery) protocols in software to be integrated with the IPv6 stack in the FPGA.

Personal Projects

Notifications Center for Android **2019**
Developed 'Notifications Center' - an Android app that organizes incoming notifications, and declutters the status bar.

Awards and Recognitions

Juniper Networks **April 2016**
Received a 'Department Spotlight Award' for resolving IPS accuracy issues reported during NSS Labs' Data-center tests, in a very narrow time-frame.

Juniper Networks **May 2015**
Our team (of three people) won 4th place at a BU-level 'Innovation Day' contest for our idea titled, 'Vulnerability Correlation for IPS'.
The idea was to use the online CVE(Common Vulnerabilities and Exposures) database combined with network fingerprint information (OS, services running, et al.) to improve SRX-IPS attack detection.

References

Available upon request.