VISHAL SAHU

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EDUCATION

Stony Brook University(SUNY), United States **Aug 2015-Dec 2016(expected)**
Masters in Computer Science (GPA:3.67/4.0)

National Institute of Technology, Tiruchirappalli, India **Jul 2007-May 2011**
B.Tech, Electronics and Communication Engineering (GPA:8.76/10.0)

- Degree Honors: First Class with Distinction

RELEVANT COURSEWORK

Systems: Operating Systems • Analysis of Algorithms • Big Data systems • Artificial Intelligence
Architecture: Advanced Microprocessors • Computer Architecture (x86 and ARM) • Embedded systems design.

TEHCNICAL SKILLS

Languages: C/C++, Java, Python, Bash, Assembly, Verilog, HTML5, LaTeX
Operating System: Linux (kernel & user space programming), Windows, FreeBSD
Tools & platforms: Git, MATLAB, QEMU, OpenNebula, OpenGL
Technologies/protocols: Virtualization, Cloud computing, TCP/IP

ACADEMIC PROJECTS

The HOSS Pedagogical Hypervisor, OSCAR Lab **Jan 2015-Dec 2016**
Guide: ***Prof. Donald E. Porter***, OSCAR lab, dept. of Computer Science

- HOSS is an extension of MIT's JOS exokernel operating system to host itself as a hypervisor.
- Currently HOSS can support itself as guest operating system. We intend to extend it's functionality to most of the operating systems.
- Extension of HOSS supporting various host platform architecture using Hardware emulation.

Anti-malware stackable file system(amfs), Stony Brook University **Sep 2015-Nov 2015**
Guide: ***Prof. Erez Zadok***, Files Systems Lab, dept. of Computer Science

- Implemented a stackable file system that efficiently quarantines the files containing malware.
- User can define and upload list of forbidden patterns during mount time.
- Developed mechanism to update pattern database with minimal re-scanning overhead.[*webpage*]

Asynchronous utility module for Linux, Stony Brook University **Oct 2015-Dec 2015**

- Developed asynchronous job queuing mechanism based on producer-consumer design paradigm. This makes user process non-blocking.
- Implemented appropriate locking mechanisms to avoid races and deadlocks.[*webpage*]
- Formulated fair scheduling policy to prevent starvation of low priority jobs.

INDUSTRIAL EXPERIENCE

Samsung Research Institute, Bangalore, India **Jun 2013-Jul 2015**
Lead Engineer

- Developed scaler for Pinch-to-Zoom feature. It performs real time scaling on input pixel data using bi-cubic interpolation and guided filtering. The architecture handles streaming data using minimal amount of memory.
- Implemented modified SPIHT, wavelet coefficients based image compression algorithm achieving 30% lossless compression factor.
- Reduced run time of Imaging system software from 220ms to 90ms using openGL vectorization on Qualcomm Adreno GPU.

Atmel R&D India Pvt. Ltd., Chennai, India **Jun 2011-May 2013**
Associate IC Design Engineer

- Member of architecture group defining I/O & memory map of ATTiny microcontroller. My role was to support in memory management specifically in efficient caching. I also developed interrupt handler for MaxTouch device driver.
- Designed asynchronous FIFO memory using Gray coded pointers for data synchronization.

ACHIEVEMENTS

Employee of the Month Award at Samsung for significant contribution in compression algorithm development and implementation. My contributions are commercialized in Samsung Galaxy *Note4*.