

Atul P. Talesara

SENIOR SOFTWARE DEVELOPER · FILE SYSTEMS AND OPERATING SYSTEM

Redmond, WA USA

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“Build to last — Design, Implement and Maintain Complex Systems-Level Software”

Summary

Software Developer with 10+ years of industry experience, chiefly programming the low-level System Software on Linux and Windows.

As the current maintainer of **Windows NT Cache Manager**, for last 5 years I have added host of new features to Filesystem **Cache Manager** and **NTFS Filesystem**, debugged performance bottlenecks and resolved a lot of end-user impacting bugs improving overall quality and experience on the Windows Operating System in terms of stability, responsiveness, scalability and performance; through Windows – 8, 8.1 (Blue), 10 (Threshold) and Redstone releases.

Education

Carnegie Mellon University

Pittsburgh, USA

M.S. IN ELECTRICAL & COMPUTER ENGINEERING (MASTERS IN ECE)

Dec. 2008

- Special focus on Operating Systems and File Systems
- *Operating System*: Designed and Implemented a complete functional Unix-like preemptive multi-tasking kernel featuring multi-threaded programming, device drivers, virtual memory, interrupt handling and concurrency control
- Designed and Implemented *Thread Library*: Thread life cycle management along with synchronization primitives, viz. Mutexes, Condition Variables, Semaphores and Readers-Writers Lock
- Designed and developed a full-fledged *e2fsck* (filesystem consistency check program) for Ext2 filesystem

Pune Institute of Computer Technology (PICT)

Pune University, India

BACHELOR OF ENGINEERING, COMPUTERS (BE. COMP)

Jun. 2002

- HaRmOnY: A Mixed Media System on Linux, final year project. Multimedia capable EXT2 file system and an efficient Real-Time delivery scheme over the network.

Skills & Languages

Operating Systems, File Systems, Networking

WINDOWS & LINUX

- C and Assembly Programming Languages
- Unix Shell Programming, Perl and text-based utilities, viz. sed & awk

Experience

Microsoft Corp.

Redmond, USA

SENIOR SOFTWARE DEVELOPER

Feb. 2009 – Present

- **Windows NT Cache Manager** and **NTFS Filesystem**: This is where I focus most of my energies at.
- Ntfs Metadata Working Set Management for optimal use of System Cache
- File-IO Attribution for accurate per-process reporting of Disk Usage (exposed to user through Windows *Task Manager*)
- Prioritization of Write Back from System Cache (Lazy Writing) to improve battery life during system stand-by as well as reduce interference with IO by foreground processes
- File-IO Coalescing to conserve battery on low-power devices like phones and tablets
- Efficient Batching of writes to Ntfs' Metadata files for efficient writing of the metadata journal
- Workload-sensitive scaling of Write Behind worker threads to evict dirty pages from the System Cache
- Design and Implement complete infrastructure in NT Cache Manager for Asynchronous Cached Reads from Filesystems
- Storage Class Memory: Enable Zero-Copy Direct Access to user-mode applications via Filesystem
- Troubleshooting and fixing numerous issues around performance, reliability and scaling pertaining to NT Cache Manager and Ntfs Filesystem

Google Inc.

SOFTWARE ENGINEER, INTERN

- Plug-in framework for database consistency check

Mountain View, CA

May 2008 –Aug. 2008

Nevis Networks (Start-up company)

SOFTWARE ENGINEER, SYSTEMS

- Engineered GDB Stub for remote kernel debugging on Nevis' multithreaded Network Processor (Supernova)
- Tweaked GNU toolchain (*gcc, gas, ld, binutils*) for custom ASIC
- Maintained and tweaked the Nevis' boot code (MIPS Assembly)

Pune, India

Jan. 2004 –Jul. 2007

IBM, India Software Labs (ISL)

SOFTWARE ENGINEER

- Validate IBM's LDAP Client-Server Suite, Tivoli Directory Server on a variety of UNIX flavors
- Conceptualized and implemented advanced testing framework allowing remote control over process, using STAF, PERL and C

Pune, India

Feb. 2003 –Jan. 2004

Kuokoa Networks (Start-up company)

SOFTWARE ENGINEER

- Filesystem Consistency Check Utility for Kuokoa Data Management System (KDMS)

Pune, India

Jun. 2002 –Dec. 2002

Extracurricular Activity

Martial Arts

BLACK BELT IN KARATE, "STAR OF THE INSTITUTION" AWARD AT THE ACADEMY

- The discipline and self-awareness earned serves me in every aspect of my personal, social and professional life

Pune & Ahemdabad, India

Hobbies

THINGS I DO WHILE I'M NOT POUNDING ON THE KEYBOARD...

- Photography: Published photos in Microsoft's yearly Photobook
- Trekking, Volleyball and Soccer

Honors & Awards

BACHELORS DEGREE FINAL YEAR PROJECT

2002 **HaRmOnY-A Mixed Media System on Linux**, 2nd place, Best Undergraduate Project

Pune, India

2002 **HaRmOnY-A Mixed Media System on Linux**, Winners of the Kuokoa Trophy: "Best product in Systems/Networking"

Pune, India