Murali Vilayannur

4725 Denevi Drive, San Jose, CA 95130	Phone: H: 630-748-0057
e-mail: murali.vilayannur@gmail.com	Phone: C: 630-814-9052
LinkedIn:	*https://www.linkedin.com/pub/murali-vilayannur/2/247/879*
GitHub:	*https://github.com/mnv104*

Seeking a challenging software engineering position.

Work Experience

Senior Technical Director & Founding Member of Engineering Team, (Mar 2012 - Current)
PernixData Inc., San Jose, CA

- First employee of a storage startup that pioneered the notion of a distributed scale out storage tier to complement a capacity tier of storage. Helped architect and implement large portions of the FVP software stack to accelerate virtual machine I/O performance using RAM and direct-attached flash resources on hypervisor. Contributed heavily to the company's IP portfolio and filed several patents and a paper at a reputed storage conference.

Senior Staff Engineer, (Oct 2006 - Feb 2012)
VMWare Inc., Palo Alto, CA

- Senior technical lead of the hypervisor storage team with a consistent track record of delivering key technical solutions and features (VMFS5 file system, space efficient desktop virtual disk format to name a few) across multiple ESX releases. Designed, proposed and implemented several innovations that led to patents and publications at prestigious academic conferences. Helped mentor several interns on advanced development projects that also contributed to the company's IP portfolio.

Postdoctoral Staff, (Jun 2005 - Sep 2006)
Argonne National Laboratory, Argonne, IL

- Co-designed, implemented and developed two generations of a popularly used open-source parallel file-system for Linux clusters (PVFS versions 1 and 2).

Education

Doctor of Philosophy (Ph.D), (Aug 1999 - May 2005)
The Pennsylvania State University., State College, PA

Selected Patents

- Computer Storage Deduplication with Jinyuan Li, Irfan Ahmad and Austin Clements
- Consistent unmapping of application data in presence of concurrent, unquiesced writers and readers with Faraz Shaikh, Satyam Vaghani and Kiran Joshi
- Hybrid Locking Using Network and On-Disk Based Schemes with Jinyuan Li, Mayank Rawat, and Dan Scales
- File system introspection and Defragmentable Virtual Disk format for space efficiency with Satyam Vaghani, Krishna Yadappanavar, Manjunath Rajasekar, and Faraz Shaikh
- In-place snapshots of a virtual disk configured with sparse extents with Krishna Yadappanavar and Faraz Shaikh
- Avoiding physical fragmentation in a virtualized storage environment with Faraz Shaikh
- Configuration-Less Network Locking Infrastructure for Shared File Systems with Jinyuan Li and Mayank Rawat

- Improvements to a System Automatically Optimizing capacity between clusters of hosts with Irfan Ahmad, Jinyuan Li, Austin Clements and Carl Waldspurger
- Optimistic Input/Output operations for clustered file-systems with Satyam Vaghani
- Performing online, in-place upgrade of cluster file system with Jinyuan Li, Mayank Rawat and Satyam Vaghani
- Method and System for ensuring cache coherence of meta-data in clustered file system with Satyam Vaghani and Jinyuan Li
- Distributed Data Movement with Mayank Rawat, Jinyuan Li, and Chris Frost
- Enforced Correct Ordering of Unmap and write commands at disk level for safe reclamation with Faraz Shaikh, Satyam Vaghani and Kiran Joshi
- AWO: Modular Analysis Layer for Storage Workloads with Ali Mashtizadeh and Ricardo Koller

Selected Publications

Deepavali Bhagwat, Mahesh Patil, Michal Ostrowski, Murali Vilayannur, Woon Jung, Chethan Kumar. A practical implementation of clustered fault tolerant write acceleration in a virtualized environment, *13th USENIX Conference on File and Storage Technologies (***FAST 15***)*.

Philip Carns, Sam Lang, Robert Ross, Murali Vilayannur, Julian Kunkel, Thomas Ludwig. Small File Access in Parallel File Systems, *IEEE International Parallel and Distributed Processing Symposium,* **IPDPS'09**.

Austin Clements, Irfan Ahmad, Murali Vilayannur, Jinyuan Li. Decentralized Deduplication in SAN Cluster File Systems, *Proceedings of the 2009 Annual USENIX Technical Conference,* **USENIX'09**.

Murali Vilayannur, Partho Nath, Anand Sivasubramaniam. Providing Tunable Consistency for a Parallel File Store, *Proceedings of the Fourth USENIX Conference on File and Storage Technologies,* **FAST'05**.