Jian Yang

Ph.D. Candidate at UC San Diego

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Expected graduation date: Summer 2019
I am interested in full-time job opportunities about software development and research.
My interests: Storage (Persistent Memory), Networking (RDMA), Distributed Systems and Operating Systems.

EDUCATION

2013-now | **UNIVERSITY OF CALIFORNIA, SAN DIEGO** | Ph.D. in Computer Science
Expected Summer 2019 | La Jolla, CA • GPA: 3.76 / 4
   Research Assistant at Non-Volatile System Laboratory (nvsl.ucsd.edu)
   Advisor: Prof. Steven Swanson

2009-2013 | **FUDAN UNIVERSITY** | B.E. in Software Engineering
June 2013 | Shanghai, China • GPA: 3.3 / 4
   Research Assistant at Institute of Parallel and Distributed Systems (ipads.se.sjtu.edu.cn) (Dec. 2010 - Apr. 2013)
   Advisor: Prof. Haibo Chen

RESEARCH

RDMA extension for large persistent memory
[WiP] Identifying performance issues with RDMA on persistent memory and purposing a new HW/SW combined solution.

Studies on real scalable persistent memory
Built tools and conducted systematic measurements for Intel Optane DC Persistent Memory Modules.
Designed a toolkit to discover the characteristic of byte-addressable NVMs and purposed application design guidelines.

Orion: a Distributed File System for Non-Volatile Main Memory
Built a kernel-level distributed file system that utilizes both distributed persistent memory and RDMA networking.

A Programmable Networking Interface
Built a framework to allow offloading application functionalities to an ARM-based NIC.

Reliable and Highly-Available Non-Volatile Main Memory
Implemented networking part of a system that provides fine-grained replication for byte-addressable NVMs.

EXPERIENCE

2014 | **VMWARE INC.** | Intern at VMKernel Team
Jun. 2015 – Sep.2015 | Palo Alto, CA
   • Worked on adding remote persistent memory support in VMware ESXi kernel.
   • Created a prototype individually that allows guest VMs to access persistent memory on remote VMware ESXi hosts
     transparently via TCP/IP and RDMA.

2013 | **HGST, INC.** | Research Intern
Jun. 2014 – Sep. 2014 | San Jose, CA
   • Worked on a library to provide RDMA accesses for distributed memory and PCM-based PCIe devices.

Teaching Assistant at UC San Diego
   • CSE 141 - Computer Architecture (Spring 2016)

Teaching Assistant at Fudan University
   • Operating Systems (Fall 2012)
   • Introduction to Computer Systems II (Spring 2012)

PROGRAMMING

Main: C, Python, Shell scripting
Some knowledge of: C++, Go, Java

QUALIFICATIONS

Linux Kernel
File System
RDMA Networking
Persistent Memory Programming
GNU Toolchain / Yocto Toolchain
Common Services at GCP/AWS

MISC.

SysAdmin for ~100 servers at NVSL
Experience with Intel Optane DC PMM

PUBLICATIONS

An Empirical Guide to the Behavior and Use of Scalable Persistent Memory
In submission

Orion: A Distributed File System for Non-Volatile Main Memories and RDMA-Capable Networks
Jian Yang, Joseph Izraelevitz and Steven Swanson | USENIX Conference on File and Storage Technologies (FAST), 2019

Basic Performance Measurements of the Intel Optane DC Persistent Memory Module
Joseph Izraelevitz, Jian Yang, Lu Zhang, Juno Kim, Xiao Liu, Amirsaman Memaripour, Yun Joon Soh, Zixuan Wang, Yi Xu, Jishen Zhao and Steven Swanson | ArXiv (arxiv.org/abs/1903.05714) , 2018

Mojim: A Reliable and Highly-Available Non-Volatile Memory System
Yiying Zhang, Jian Yang, Amirsaman Memaripour and Steven Swanson. | Architectural Support for Programming Languages and Operating Systems (ASPLOS), 2015

Architecting flash based solid-state-Architecting Flash-based Solid-State Drive for High-performance I/O Virtualization
Xiang Song, Jian Yang and Haibo Chen | IEEE Computer Architecture Letter (CAL), 2013

Parallelizing management operations for virtual machines
Xiang Song, Jicheng Shi, Ran Liu, Jian Yang, Haibo Chen and Binyu Zang | Virtual Execution Environments (VEE), 2013