



Jialin Li won the Best Poster Award at the UW Cloud Workshop for "Just Say No to Paxos Overhead: Replacing Consensus with Network Ordering". Jialin is congratulated by (left to right) Bobbie Manne (Cavium), Rajiv Dhawan (Samsung), and

Pankaj Mehra (Western Digital/SanDisk).

Jialin is a 5th year PhD student advised by Professors Dan Ports and Arvind Krishnamurthy. For more UW Workshop photos, please see the bottom of this Newsletter.

Hello Jim, Welcome to the IAP Newsletter with items from Q1 2017 as well as upcoming in Q2 2017.

Here is what is happening...

IAP WORKSHOPS

University of Texas Cloud Workshop, November 10, 2017

- The [UT Cloud Workshop](#) is being co-organized by Prof. Derek Chiou in ECE and Prof. Simon Peter in CS for Friday November 10 on the UT campus. Expect a full day of talks and posters from professors, students and experts in industry.

University of Washington Cloud Workshop, March 31, 2017

- The [UW Cloud Workshop](#) was held on Friday March 31, 2017 on the UW campus (see photos at top and bottom of this Newsletter).

- Prof. Arvind Krishnamurthy summarized, “This was an excellent opportunity for industry and academia experts across multiple areas to get together to discuss cross-cutting approaches for the future of cloud computing. Looking forward to the next workshop!”
- UW research centers, groups and labs that were represented included **(1) the Security and Privacy Research Laboratory, (2) the Molecular Information Systems Lab, (3) the Computer Systems Lab, (4) the Center for Future Architectures Research, (5) the Programming Languages and Software Engineering Group, and (6) SAMPA.**
- There were several technical presentations during the day by professors, students and industry scientists and engineers. Companies presenting included **CAVIUM, FACEBOOK, INTEL, MICROSOFT, SANDISK and XILINX.** Several research posters were presented by grad students from UW.

The speakers and presentation titles are listed below. [The agenda, abstracts, and bios are posted on the agenda page.](#)

- Tom Anderson, UW, "High Performance RPC Packet Processing with FlexNIC"
- Doug Burger, Microsoft, "Running Hardware Microservices on Configurable Clouds"
- Luis Ceze, UW, "A DNA-based Archival Storage System"
- Derek Chickles, Cavium, "Intelligent NICS for the Data Center"
- Kim Hazelwood, Facebook, "Scalable Performance in Facebook Data Centers"
- Arvind Krishnamurthy, UW, "What Can We Do with Programmable Switches?"
- Pankaj Mehra, Sandisk, "Evolutionary Changes, Revolutionary Implications: Persistent Memory in the Data Center"
- Dan Ports, UW, "Rethinking Distributed Systems for the Datacenter"
- Franziska Roesner, UW, "Security and Privacy for Augmented Reality Platforms"
- Gabriel Southern, Intel, "FPGAs in the Data Center"
- Michael Taylor, UW, "Specializing the Planet's Computation: ASIC Clouds"

- Kees Vissers, Xilinx, "A Framework for Reduced Precision Neural Networks on FPGAs"
- **Best Poster Award:** Jialin Li won the Best Poster Award for "Just Say No to Paxos Overhead: Replacing Consensus with Network Ordering". See photo at top of Newsletter.

RECENT PAPERS and UPCOMING EVENTS

USENIX Symposium on Networked Systems Design and Implementation (NSDI '17), Boston, MA, March 27-29, 2017

- [Curator: Self-Managing Storage for Enterprise Clusters](#), Cano, S. Aiyar, V. Arora, M. Bhattacharyya, A. Chaganti, C. Cheah, B. Chun, K. Gupta, V. Khot, A. Krishnamurthy, NSDI, 2017.
- [SCL: Simplifying Distributed SDN Control Planes](#), Panda, W. Zheng, X. Hu, A. Krishnamurthy, S. Shenker, NSDI, 2017.
- [Evaluating the Power of Flexible Packet Processing for Network Resource Allocation](#), N. Sharma, A. Kaufmann, T. Anderson, C. Kim, A. Krishnamurthy, J. Nelson, S. Peter, NSDI, 2017.
- [RAIL: A Case for Redundant Arrays of Inexpensive Links in Data Center Networks](#), D. Zhuo, M. Ghobadi, R. Mahajan, A. Phanishayee, X. Zou, H. Guan, A. Krishnamurthy, T. Anderson, NSDI, 2017.
- [Gaia: Geo-Distributed Machine Learning Approaching LAN Speeds](#), Kevin Hsieh, Aaron Harlap, Nandita Vijaykumar, Dimitris Konomis, Gregory R. Ganger, Phillip B. Gibbons, and Onur Mutlu

Design, Automation, and Test in Europe Conference (DATE), Lausanne, Switzerland, March 2017.

- [The RowHammer Problem and Other Issues We May Face as Memory Becomes Denser](#), Onur Mutu, Invited Paper

22nd Intl. Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), Xi'an, China, April 2017

- [ReFlex: Remote Flash == Local Flash](#)
Ana Klimovic, Heiner Litz, Christos Kozyrakis
- [TETRIS: Scalable and Efficient Neural Network Acceleration with 3D Memory](#)
Mingyu Gao, Ping Pu, Xun Yang, Mark Horowitz, Christos Kozyrakis
- [Bolt: I Know What You Did Last Summer... In the Cloud](#)
Christina Delimitrou, Christos Kozyrakis
- [IncBricks: Toward In-Network Computation with an In-Network Cache](#) M. Liu, L. Luo, J. Nelson, L. Ceze, A. Krishnamurthy, Kishore Atreya (Cavium)
- [Mallacc: Accelerating Memory Allocation](#) Svilen Kanev, Sam Likun Xi, Gu-Yeon Wei, David Brooks

EUROSYS 2017, Belgrade, Siberia, April 26-28

- [Proteus: agile ML elasticity through tiered reliability in dynamic resource markets](#) Aaron Harlap, Alexey Tumanov, Andrew Chung, Gregory R. Ganger, Philip Gibbons
- [An Empirical Study on the Correctness of Formally Verified Distributed Systems](#) Pedro Fonseca, Kaiyuan Zhang, Xi Wang, and Arvind Krishnamurthy
- [Online Reconstruction of Structural Information from Datacenter Logs](#) Zaheer Chothia, John Liagouris, Desislava Dimitrova, and Timothy Roscoe

ISCA 2017: International Symposium on Computer Architecture, Toronto, Canada, June 25-28, 2017

- **Fractal: An Execution Model for Fine-Grain Nested Speculative Parallelism** Suvinay Subramanian (to appear), Mark C. Jeffrey, Maleen Abeydeera, Hyun-Ryong Lee, Victor Ying, Joel Emel, Daniel Sanchez
- **Jenga: Software-Defined Cache Hierarchies** (to appear) Po-An Tsai, Nathan Beckmann, Daniel Sanchez

RECENT BLOG POSTS

- Prof. Andy Pavlo, Carnegie Mellon, [Building a New Database Management System in Academia](#), March 20, 2017
- Prof. Ken Birman, Cornell, [Will Smart Memory be the Next Big Thing?](#), April 15, 2017 (note that Ken's blog "Thinking About Distributed Systems" is very active, with 18 posts already in 2017)

AWARDS

- [RISC-V Chosen as Best Technology of 2016](#) by the Linley Group
- **BEST PAPER AWARD** - Digital Forensics Conference, Lake Constance, Germany, March 2017. [Improving the Reliability of Chip-Off Forensic Analysis of NAND Flash Memory Devices](#), Aya Fukami, Saugata Ghose, Yixin Luo, Yu Cai, and Onur Mutlu
- [Mihir Patil Wins the UC Berkeley Warren Dere Design Award](#) The Warren Dere Design Award award is presented to graduating seniors whose accomplishments in engineering design are judged to be most outstanding. Congrats to Mihir, who was one of the few undergrads to present a poster at our Berkeley Cloud Workshop in 2015.

BECOME AN IAP MEMBER: JOIN US IN ADVANCING THE SCIENCE AND APPLICATIONS OF CLOUD COMPUTING

Please feel free to contact us for more info on these items.

Best,
Jim Ballingall

Executive Director

Industry-Academia Partnership (IAP)

jim@industry-academia.org

Cel: 408-212-1035

Copyright © 2016-2017 Industry-Academia Partnership

See what's happening on our social sites



Photos below are from the UW Cloud Workshop on March 31st in the UW HUB.



Qiao Zhang (left), a 4th year PhD student at UW describes his research on data center networking during the UW Poster Session.



Dr. Kim Hazelwood, Facebook presents "Scalable Performance in Facebook Data Centers" at the UW Cloud Workshop.



Avinash Sodani (Cavium) and Doug Burger (Microsoft) chat during the morning break at UW.



Professor Tom Anderson talks with his grad student Antoine Kaufmann during the UW Poster Session.



Several Workshop attendees gathered for a group photo as they enjoyed pizza and each other's company after the awards were presented at the end of the day.