

Chi (Charles) Xu

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SUMMARY

- Decent understanding and developing experience of Java, C/C++, Python and Scala.
- Practical experience with Android and Windows phone application development.
- Research experience in Cloud Computing, Virtualization and Mobile Computing.
- Extensive knowledge with big data applications including Hadoop and Spark.
- Skilled in algorithm design and implementation, system profiling and optimization.

EDUCATION

Simon Fraser University, Burnaby, BC

Master of Science (Thesis-based) in Computing Science

Sep 2013 – Dec 2016

Advisor: Prof. Jiangchuan Liu GPA: 4.13/4.33

Xidian University, Xi'an, China

Bachelor of Engineering in Software Engineering

Sep 2009 – Jul 2013

GPA: 88/100 Rank: 7/427 Major GPA: 91/100

EXPERIENCE

Research Assistant

Sep 2013 – Present

Network Modeling Lab, Simon Fraser University

- Performed measurement studies on the network performance and energy efficiency of cloud virtual machines in both Xen and KVM environments.
- Designed and implemented *Hylics* in the KVM environment, an architecture leveraging hypervisor level in-memory file system to improve job performance.
- Deployed Apache Hadoop, Spark, and Mesos in both Amazon EC2 and local cloud testbed for performance measurement and data analysis.

Software Developer

Aug 2012 – Dec 2012

City University of Hong Kong Research Institute

- Participated in the development of *Cloud Enabled Intelligent Camera Network System* and thoroughly understood the format of MPEG-2 Transport Stream.
- Implemented functions in C++ for encapsulating raw image and audio frames from cameras into MPEG-2 Transport Stream with Live555 Media Library.
- Designed and Implemented a surveillance robot with realtime streaming module and tethered driving functions.

Undergraduate Research Assistant

Jan 2012 – Jul 2013

Xidian University

- Worked on project *Oscillation aware 3D Barrier Coverage with Wireless Sensors*.
- Proposed probability-based algorithms to capture the location uncertainty of sensors and accordingly adjust the sensing ranges to ensure the coverage.

SELECTED PROJECTS

Hello! Papercut

Developer

- Hello! Papercut is the first mobile application to process raw image with papercut-effect filters, which has exceeded **300,000** downloads since its release.
- Designed and Implemented the photo-to-papercut algorithms in Java.
- Developed Hello! Papercut on the Android platform. Transplanted partial skeleton code from Windows phone platform.

vCanvas

Developer & Group Leader

- vCanvas is a mobile application that instantly constructs and presents panoramic virtual tours on Android smartphone.
- The prototype system was presented at IEEE International Conference on Mobile Ad hoc and Sensor Systems.
- Full-stack implementation with web interfaces to present the virtual tour output.

EnumM

Independent Developer

- EnumM is an open source implementation in Java for enumerating all perfect, maximum and maximal matchings in bipartite graphs.

SKILLS

Programming

Over 10000 lines: Java, MATLAB, \LaTeX

Over 5000 lines: C/C++, Shell, Python

Familiar: Scala, C#, SQL, HTML, PHP

Platform and Tools

Proficient: Linux, Xen, KVM, Amazon EC2, Android

Familiar: Hadoop, Spark, Mesos, Live555, Git, OpenCV

AWARDS

SFU Graduate Fellowship

2015

Chinese National Scholarship (Top 1%)

2013

1st prize scholarship in Software Engineering Department (Top 4%)

2011, 2012, 2013

3rd prize in National College English Contest

2012

SELECTED PUBLICATIONS

1. **C. Xu**, X. Ma, R. Shea, H. Wang, and J. Liu, "Enhancing Performance and Energy Efficiency for Hybrid Workloads in Virtualized Cloud Environment", submitted to *IEEE Transactions on Parallel and Distributed Systems*.
2. **C. Xu**, H. Wang, R. Shea, F. Wang, and J. Liu, "On Multiple Virtual NICs in Cloud Computing: Performance Bottleneck and Enhancement", submitted to *IEEE Systems Journal*, under major revision.
3. J. Zhao, H. Wang, J. Liu, **C. Xu**, "Multipath TCP for Datacenters: From Energy Efficiency Perspective", in *Procs. of IEEE International Conference on Computer Communications (INFOCOM)*, 2017.
4. **C. Xu**, X. Ma, R. Shea, H. Wang, and J. Liu, "MemNet: Enhancing Throughput and Energy Efficiency for Hybrid Workloads via Para-virtualized Memory Sharing", in *Procs. of IEEE International Conference on Cloud Computing (CLOUD)*, 2016.
5. **C. Xu**, Z. Zhao, H. Wang, R. Shea, and J. Liu, "Energy Efficiency of Cloud Virtual Machines: From Traffic Pattern and CPU Affinity Perspectives", *IEEE Systems Journal*, 2015.
6. **C. Xu**, Z. Zhao, H. Wang, and J. Liu, "On the Interplay between Network Traffic and Energy Consumption in Virtualized Environment: An Empirical Study" in *Procs. of IEEE International Conference on Cloud Computing (CLOUD)*, 2014.