HUANLE XU

CONTACT

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EDUCATION

The Chinese University of Hong Kong Aug. 2012 - Aug. 2016 (Expected)

Ph.D. in Information Engineering
Dissertation Advisor: Prof. Wing Cheong Lau,

Shanghai Jiao Tong University Sep. 2008 - Jun. 2012

BSc.(Eng). in Information Engineering
Ranking: Top 8%

RESEARCH EXPERIENCE

The University of Texas at Austin Sep. 2015 - Feb. 2016
Visiting Scholar in ECE Department *Advisor: Prof. Gustavo de Veciana*

- Design online resource allocation policies in big data processing clusters, combining redundant execution with opportunistic checkpointing so as to minimize the overall job delays.

RESEARCH INTERESTS

- Design, Implementation, Performance Optimization in Big Data Processing Systems
- Algorithm and Protocol Design in Decentralized Social Networks
- Graph Algorithm Design under Parallel Processing Frameworks
- Distributed Storage Codes Design

RECENT RESEARCH PROJECTS

Speculative Execution Mechanism in Big Data Processing Systems

- Design and implement resource allocation modules under MapReduce/ Hadoop YARN.
- Plug in speculative execution schemes to enhance fault tolerance computing and reduce job response time.

Resource Allocation Algorithms for Large-Scale Clusters with Performance Guarantees

- Combine Job scheduling and speculative execution to maximize system utility, which is a combination of job response time and computation cost.
- Design task cloning algorithms with competitive performance bounds to reduce job response time.

Protocol Design and Performance Analysis for Decentralized Social Networks

- Design a message dissemination protocol in Decentralized Social Networks to maximize system utility from an optimization perspective.

PUBLICATIONS

1. **Huanle Xu** and Wing Cheong Lau, "Optimization for Speculative Execution in Big Data Processing Clusters", in IEEE Transactions on Parallel and Distributed Systems (IEEE TPDS), accepted for publication, May 2016.
2. **Huanle Xu** and Wing Cheong Lau, "Task-Cloning Algorithms in a MapReduce Cluster with Competitive Performance Bounds", in IEEE ICDCS 2015.

3. **Huanle Xu** and Wing Cheong Lau, "Speculative Execution for Multiple Jobs in a MapReduce-like Cluster", in IEEE Infocom 2015.
4. **Huanle Xu**, Pili Hu, Wing Cheong Lau, Qiming Zhang and Yang Wu, "DPCP: A Protocol for Optimal Pull Coordination in Decentralized Social Networks", in IEEE Infocom 2015.
5. **Huanle Xu**, Ronghai Yang, Zhibo Yang and Wing Cheong Lau, "Solving Large Graph Problems in MapReduce-Like Frameworks via Optimized Parameter Configuration", in the 15th International Conference on Algorithms and Architectures for Parallel Processing (ICA3PP), 2015.
6. **Huanle Xu** and Wing Cheong Lau, "Speculative Execution for a Single Job in a MapReduce-like System", in IEEE International Conference on Cloud Computing (IEEE Cloud), 2014.
7. **Huanle Xu** and Wing Cheong Lau, "Resource Optimization for Speculative Execution in a MapReduce Cluster" (PhD Forum), in IEEE ICNP 2013.
8. Ruohan Gao, **Huanle Xu**, Pili Hu and Wing Cheong Lau, "Accelerating Graph Mining Algorithms via Uniform Random Edge Sampling", in IEEE ICC 2016.
9. Kenneth W. Shum, Hanxu Hou, Minghua Chen, **Huanle Xu** and Hui Li, "BASIC Codes: Low-Complexity Regenerating Codes for Distributed Storage Systems", in IEEE International Symposium on Information Theory (IEEE ISIT), 2014.

WORKING PAPERS

10. **Huanle Xu**, Gustavo de Veciana and Wing Cheong Lau, "Addressing Job Processing Variability Through Redundant Execution and Opportunistic Checkpointing: A Competitive Analysis".
11. Zhibo Yang, **Huanle Xu**, Keda Fu and Yong Xia, "Similar Handwritten Chinese Character Discrimination by Weakly Supervised Learning".

HONORS/ AWARDS

- Reaching Out Award of CUHK — May 2016
- Overseas Research Attachment Programme Award of CUHK — Oct 2015
- Student Travel Grant for MLSS Beijing — June 2014
- Student Travel Grant for ICNP — Oct 2013
- 1st Prize in National Mathematical Contest in Modeling — Nov 2011
- 3rd Prize in National Mathematical Tournament in Modeling (23/1772) — May 2011

GRADUATE COURSEWORK

Information Theory
Random Process
Big Data Analytics
Optimization in Networks and Systems
Foundations of Optimization
Randomness and Computation
Machine Learning

TEACHING ASSISTANT EXPERIENCES

Signal and Systems
Principles of Communication Systems
Advanced Topics in Cloud Computing
Networking Protocols and Systems
Telecommunication Switching and Network Systems
Big Data Systems and Information Processing

PROFESSIONAL SERVICES

- Reviewer for IEEE Infocom, IEEE ICC, IEEE Globecom
- Student Volunteer for IEEE Infocom 2015
- Student Volunteer for ACM Sigcomm 2013