
Jun Li, Ph.D.

Department of Computer Science
Queens College & Graduate Center, City University of New York

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PERSONAL INFORMATION

- Citizenship: Chinese
- Permanent Residence: Canadian

RESEARCH INTERESTS

- coding theory, distributed computing, machine learning, distributed storage

EDUCATION

- Doctor of Philosophy, September 2012 - June 2017
Department of Electrical and Computer Engineering, University of Toronto
Toronto, ON, Canada
 - ▷ Supervisor: Baochun Li
 - ▷ Supervisory committee: Frank Kschischang and Cristiana Amza
 - ▷ Dissertation: Efficient Erasure Coding in Distributed Storage Systems
- Master of Science, September 2009 - June 2012
School of Computer Science, Fudan University
Shanghai, China
- Bachelor of Science, September 2005 - June 2009
School of Computer Science, Fudan University
Shanghai, China

PROFESSIONAL EXPERIENCE

- Assistant Professor (tenure-track), August 2020 - present
Department of Computer Science, Queens College & Graduate Center
City University of New York
New York, NY
- Assistant Professor (tenure-track), August 2017 – August 2020
School of Computing and Information Sciences, Florida International University
Miami, FL

GRANTS

- [G1] PI, CIF: Small: Coding Techniques for Distributed Machine Learning (with REU Supplement), National Science Foundation, 2019-2022, \$516,000, CCF-1910447.
- [G2] PI, Parallelism-aware Coding for Distributed Storage and Computing, AWS Cloud Credits for Research, 2019, \$9,000.

[G3] Senior Personnel, REU SITE: ASSET: Research Experiences for Undergraduates in Advanced Secured Sensor Enabling Technologies, National Science Foundation, 2019-2022, \$377,684.

[G4] PI, Google Cloud Platform Education Grant, 2018, \$2,000.

[G5] Senior Personnel, RET in Engineering and Computer Science SITE: Research Experience for Teachers on Cyber-Enabled Technologies, National Science Foundation, 2018-2021, \$600,000.

PUBLICATIONS

- Journal publications

[J1] **Jun Li**, Baochun Li, “Demand-aware Erasure Coding for Distributed Storage Systems,” in IEEE Transactions on Cloud Computing, vol. 9, no. 2, pp. 532-545, 2021.

[J2] **Jun Li**, Baochun Li, Bo Li, “Efficient Dissemination of Erasure-coded Data in Data Centers”, in IEEE Transactions on Emerging Topics in Computing, vol. 7, no. 8, pp. 468-480, 2019.

[J3] **Jun Li**, Baochun Li, “Beehive: Erasure Codes for Fixing Multiple Failures in Distributed Storage Systems,” in IEEE Transactions on Parallel and Distributed Systems, vol. 28, no. 5, pp. 1257-1270, May 2017.

[J4] **Jun Li**, Baochun Li, “Erasure Coding for Cloud Storage Systems: A Survey,” in Tsinghua Science and Technology, vol. 18, no. 3, pp. 259-272, June 2013.

- Conference proceedings and workshop papers

[C1] Xiaodi Fan, Angel Saldivia, Pedro Soto, **Jun Li**, “Coded Matrix Chain Multiplication”, in Proc. IEEE/ACM 29th International Symposium on Quality of Service (IWQOS), Virtual Conference, June 25-28, 2021.

[C2] Xiaodi Fan, Pedro Soto, Xiaomei Zhong, Dan Xi, Yan Wang, **Jun Li**, “Leveraging Stragglers in Coded Computing with Heterogeneous Servers”, in Proc. IEEE/ACM 28th International Symposium on Quality of Service (IWQoS), Hangzhou, China, June 15-17, 2020 (acceptance ratio: 29%).

[C3] Pedro Soto, **Jun Li**, “Straggler-free Coding for Concurrent Matrix Multiplications”, in Proc. of IEEE International Symposium on Information Theory (ISIT), Los Angeles, CA, June 21-26, 2020.

[C4] Xian Su, Xiaomei Zhong, Xiaodi Fan, **Jun Li**, “Local Re-encoding for Coded Matrix Multiplication”, in Proc. of IEEE International Symposium on Information Theory (ISIT), Los Angeles, CA, June 21-26, 2020.

[C5] Xian Su, Xiaodi Fan, **Jun Li**, “Dynamic Coding for Distributed Matrix Multiplication,” NeurIPS 2019 Workshop on Information Theory and Machine Learning, Vancouver, BC, Canada, December 13, 2019.

[C6] Pedro Soto, **Jun Li**, Xiaodi Fan, “Dual Entangled Polynomial Code: Three-Dimensional Coding for Distributed Matrix Multiplication,” in Proc. of the 36th International Conference on Machine Learning (ICML), Long Beach, CA, June 10-13, 2019 (acceptance ratio: 22.6%).

[C7] **Jun Li**, Baochun Li, “Parallelism-Aware Locally Repairable Code for Distributed Storage Systems”, in Proc. of the 38th IEEE International Conference on Distributed Computing Systems (ICDCS), Vienna, Austria, July 2-5, 2018 (acceptance ratio: 20%).

- [C8] **Jun Li**, Baochun Li, “On Data Parallelism of Erasure Coding in Distributed Storage Systems,” in Proc. of the 37th IEEE International Conference on Distributed Computing (ICDCS), Atlanta, GA, June 5-8, 2017 (acceptance ratio: 16.9%).
- [C9] Wei Wang, Baochun Li, Ben Liang, **Jun Li**, “Multi-Resource Fair Sharing for Datacenter Jobs with Placement Constraints,” in Proc. of the International Conference for High Performance Computing, Networking, Storage and Analysis (SC), Salt Lake City, UT, November 13-18, 2016, pp. 1-12 (acceptance ratio: 18%).
- [C10] **Jun Li**, Baochun Li, “Zebra: Demand-aware Erasure Coding for Distributed Storage Systems,” in Proc. of the 24th IEEE/ACM International Symposium on Quality of Service (IWQoS), Beijing, China, June 20-21, 2016, pp. 1-10 (acceptance ratio: 21%).
- [C11] Wei Wang, Baochun Li, Ben Liang, **Jun Li**, “Towards Multi-Resource Fair Allocation with Placement Constraints,” in Proc. of ACM SIGMETRICS 2016 (2-page poster paper), Antibes Juan-les-Pins, France, June 14-18, 2016, pp. 415-416 (acceptance ratio: 24%).
- [C12] **Jun Li**, Baochun Li, “Beehive: Erasure Codes for Fixing Multiple Failures in Distributed Storage Systems,” in Proc. of the USENIX Workshop on Hot Topics in Storage and File Systems (HotStorage), Santa Clara, CA, July 6-7, 2015 (acceptance ratio: 30%).
- [C13] **Jun Li**, Baochun Li, “Cooperative Repair with Minimum-Storage Regenerating Codes for Distributed Storage,” in Proc. of the IEEE Conference on Computer Communications (INFOCOM), Toronto, ON, April 27 - May. 2, 2014, pp. 316-324 (acceptance ratio: 19%).
- [C14] **Jun Li**, Xin Wang, and Baochun Li, “Cooperative Pipelined Regeneration in Distributed Storage Systems,” in Proc. of the IEEE Conference on Computer Communications (INFOCOM), Turin, Italy, April 14-19, 2013, pp. 2346-2354 (acceptance ratio: 17%).
- [C15] **Jun Li**, Xin Wang, and Baochun Li, “Pipelined Regeneration with Regenerating Codes for Distributed Storage Systems,” in Proc. of International Symposium on Network Coding (NetCod), Beijing, China, July 25-27, 2011, pp. 1-6.
- [C16] **Jun Li**, Shuang Yang, Xin Wang, “Building Regeneration Trees in Distributed Storage Systems with Asymmetric Links,” in Proc. of the 6th International Conference on Collaborative Computing: Networking, Applications, and Worksharing (CollaborateCom 2010), Chicago, IL, October 9-12, 2010, pp. 1-10 (acceptance ratio: 37%).
- [C17] Markus Kliegl, Jason Lee, **Jun Li**, Xinchao Zhang, Chuanxiong Guo, David Rincón, “Generalized DCell Structure for Load-Balanced Data Center Network,” in Proc. of the 29th IEEE Conference on Computer Communications (INFOCOM), Work-In-Progress Track, San Diego, CA, March 15-19, 2010, pp. 1-5 (acceptance ratio: 28%).
– The first four authors share equal contributions.
- [C18] **Jun Li**, Shuang Yang, Xin Wang, Baochun Li, “Tree-structured Data Regeneration in Distributed Storage Systems with Regenerating Codes,” in Proc. of the IEEE Conference on Computer Communications (INFOCOM), San Diego, CA, March 15-19, 2010, pp. 1-9 (acceptance ratio: 17%).
- [C19] **Jun Li**, Shuang Yang, Xin Wang, Xiangyang Xue, Baochun Li, “Tree-structured Data Regeneration with Network Coding in Distributed Storage Systems,” in Proc. of the 17th IEEE International Workshop on Quality of Service (IWQoS), Charleston, SC, July 13-15, 2009, pp. 1-9 (acceptance ratio: 33%).

- Technical Reports

[TR1] Markus Kliegl, Jason Lee, **Jun Li**, Xinchao Zhang, David Rincón, Chuanxiong Guo, “The Generalized DCell Network Structures and Their Graph Properties,” Microsoft Research TechReport, MSR-TR-2009-140.

PRESENTATIONS

- [P1] “Straggler-free Erasure Coding for Distributed Matrix Multiplication,” Guest Talk (online), CUNY Graduate Center, Feb. 8, 2021
- [P2] “Straggler-free Erasure Coding for Distributed Matrix Multiplication,” Research Seminar (online), Arizona State University, April 10, 2020.
- [P3] “Dual Entangled Polynomial Code: Three-Dimensional Coding for Distributed Matrix Multiplication,” Research Seminar, McMaster University, Hamilton, ON, Canada, July 27, 2019.
- [P4] “Parallelism-aware Erasure Coding for Distributed Data Analytics,” Research Seminar, Huawei Technologies Co., Ltd. Chengdu Institute, Chengdu, China, August 14, 2018.
- [P5] “Parallelism-aware Locally Repairable Code for Distributed Storage Systems,” Research Seminar, Fudan University, Shanghai, China, August 9, 2018.
- [P6] “Parallelism-aware Locally Repairable Code for Distributed Storage Systems,” Oral Presentation, IEEE International Conference on Distributed Computing Systems (ICDCS), Vienna, Austria, July 4, 2018.
- [P7] “Erasure Coding for Distributed Storage Systems,” Oral Presentation, FIU SCIS’s Faculty Seminar Series, Miami, FL, February 9, 2018.
- [P8] “On Data Parallelism of Erasure Coding in Distributed Storage Systems,” Oral Presentation, IEEE International Conference on Distributed Computing Systems (ICDCS), Atlanta, GA, June 6, 2017.
- [P9] “Erasure Coding in Distributed Storage Systems with Optimal Network Overhead,” Invited Research Talk, Shanghai Jiao Tong University, Shanghai, China, March 23, 2017.
- [P10] “Erasure Coding in Distributed Storage Systems with Optimal Network Overhead,” Invited Research Talk, Florida International University, Miami, FL, March 6, 2017.
- [P11] “Erasure Coding in Distributed Storage Systems with Optimal Network Overhead,” Invited Research Talk, Queen’s University Belfast, Belfast, United Kingdom, February 2, 2017.
- [P12] “Zebra: Demand-aware Erasure Coding for Distributed Storage Systems,” Poster Presentation, SAVI Annual General Meeting, Toronto, ON, July 6, 2016.
- [P13] “Zebra: Demand-aware Erasure Coding for Distributed Storage Systems,” Oral Presentation, IEEE/ACM International Symposium on Quality of Service (IWQoS), Beijing, China, June 20, 2016.
- [P14] “Beehive: Erasure Codes for Fixing Multiple Failures in Distributed Storage Systems,” Oral Presentation, USENIX Workshop on Hot Topics in Storage and File Systems (HotStorage), Santa Clara, CA, July 6, 2015.
- [P15] “Repairing Erasure Codes Cooperatively in Storage-Intensive Applications,” Poster Presentation, SAVI Annual General Meeting, Toronto, ON, July 7, 2014.

- [P16] “Cooperative Repair with Minimum-Storage Regenerating Codes for Distributed Storage,” Oral Presentation, IEEE Conference on Computer Communications (INFOCOM), Toronto, ON, April 29, 2014.
- [P17] “Cooperative Pipelined Regeneration in Distributed Storage Systems,” Oral and Poster Presentation, Annual ECE Connections Graduate Symposium, Toronto, ON, May 7, 2013.
- [P18] “Cooperative Pipelined Regeneration in Distributed Storage Systems,” Oral Presentation, IEEE Conference on Computer Communications (INFOCOM), Turin, Italy, April 18, 2013.
- [P19] “Pipelined Regeneration with Regenerating Codes for Distributed Storage Systems,” Oral Presentation, International Symposium on Network Coding (NetCod), Beijing, China, July 25, 2011.
- [P20] “Tree-structured Data Regeneration in Distributed Storage Systems with Regenerating Codes,” Oral Presentation, IEEE Conference on Computer Communications (INFOCOM), San Diego, CA, March 18, 2010.
- [P21] “Generalized DCell Structure for Load-Balanced Data Center Network,” Oral Presentation, IEEE Conference on Computer Communications (INFOCOM), San Diego, CA, March 15, 2010.
- [P22] “Router-supported Data Regeneration in Distributed Storage Systems,” Poster Presentation, USENIX Conference on File and Storage Technologies (FAST), San Jose, CA, February 24, 2010.
- [P23] “Router Caching for Video Streaming Systems”, Poster Presentation, USENIX Conference on File and Storage Technologies (FAST), San Jose, CA, February 24, 2010.
- [P24] “A Fast-repair P2P Data Backup System with Network Coding,” Oral Presentation, Universitas 21 (U21) Undergraduate Research Conference, Glasgow, UK, October 20, 2009.
- [P25] “Tree-structured Data Regeneration with Network Coding in Distributed Storage Systems,” Oral Presentation, IEEE International Workshop on Quality of Service (IWQoS), Charleston, SC, July 13, 2009.

HONORS & AWARDS

- Doctoral Completion Award, University of Toronto, 2016
- USENIX FAST '16 Student Travel Grant, 2016
- USENIX ATC '15 Student Travel Grant, 2015
- Shanghai Outstanding Achievement of Graduate Students (Master Thesis), 2015
- USENIX FAST '15 Student Travel Grant, 2015
- ECE Fellowship, University of Toronto, 2012-2015
- SGS Conference Grant, University of Toronto, 2013
- Scholarship for Graduate Students, 1st Prize, Fudan University, 2011, 2010
- Morgan Stanley Scholarship, 2010
- Google Excellence Scholarship, 2010

- Scholarship for Freshmen, 1st Prize, Fudan University, 2009
- Outstanding Graduate of Fudan University, 2009
- Excellent Bachelor Thesis, Fudan University, 2009
- Wangdao Scholarship, Fudan University, Summer, 2009
- People's Scholarship, 2nd Prize, Fudan University, Autumn, 2009, 2008, 2007, 2006
- Excellent Student Award of Media Computing and Web Intelligence Lab, Fudan University, 2008

PROFESSIONAL ACTIVITIES

- Conference Chairs
 - 17th IEEE International Conference on Mobility, Sensing and Networking (MSN 2021), publicity co-chair
- Membership in Conference Committees
 - IEEE INFOCOM 2022, technical program committee
 - Grace Hopper Celebration 2018, faculty committee
 - IEEE ICC 2018 Workshop - Information Centric Networking Solutions for Real World Applications (ICNS), program committee
- Review for Funding Agencies
 - NSF (2018)
- Review for Journal/Conference Manuscript Submissions
 - IEEE Transactions on Dependable and Secure Computing (2021)
 - IEEE Symposium on Information Theory (2019, 2020, 2021)
 - IEEE Transactions on Parallel and Distributed Systems (2018, 2020)
 - ACM Transactions on Storage (2016, 2019, 2020)
 - IEEE Transactions on Communications (2020)
 - IEEE Transactions on Cloud Computing (2014, 2015, 2017, 2018, 2019, 2020)
 - ACM Transactions on Modeling and Performance Evaluation of Computing Systems (2020)
 - IEEE Transactions on Service Computing (2020)
 - IEEE Letters of the Computer Society (2019)
 - IEEE Transactions on Computers (2018, 2019)
 - IEEE Transactions on Network and Service Management (2018, 2019)
 - IEEE Transactions on Mobile Computing (2015, 2016, 2017, 2018, 2019)
 - Frontiers of Computer Science (2017, 2018)
 - IEEE Communications Letters (2016)
 - Springer Multimedia System (2016)
 - PeerJ Computer Science (2016)
- Membership:
 - IEEE member, 2013 - present

TEACHING

- CSc 84030: Big Data Analytics, Graduate Center, Queens College, City University of New York (Fall 2021)
- CSCI 240: Computer Organization and Assembly Language, Queens College, City University of New York (Fall 2020, Spring 2021, Fall 2021)
- CSCI 381/780: Special Topics in Computer Science (Cloud Computing), Queens College, City University of New York (Spring 2021)
- COT 3100: Discrete Structures, Florida International University (Spring 2020)
- CDA 4101: Structured Computer Organization, Florida International University (Spring 2020)
- CEN 4083: Introduction to Cloud Computing, Florida International University (Fall 2018)
- CDA 3103: Fundamentals of Computer Systems, Florida International University (Spring 2018, Spring 2019, Fall 2019)

MENTORSHIP

- Students in the Ph.D. Program
 - Xian Su CS Ph.D. student (CUNY Graduate Center) Fall 2019 – present
 - Xiaodi Fan CS Ph.D. student (CUNY Graduate Center) Fall 2018 – present
 - Pedro Soto CS Ph.D. student (CUNY Graduate Center) Fall 2018 – present
- Students in the Master Program
 - Dan Xi Master in Information Technology, FIU Spring 2019 – Summer 2020
 - Xian Su Master in Computer Science, FIU Fall 2019 – Summer 2019
 - Zhongzhou Li Master in Computer Engineering, FIU Summer 2018 – Fall 2018
 - Ipsita Acharya Master in Computer Engineering, FIU Spring 2018 – Summer 2018
- Undergraduate Students funded by NSF REU programs
 - Brian Sukhnandan CUNY Queens College Spring 2021
 - Jared Parker Virginia Commonwealth University Summer 2020
 - Haobin Liang Florida International University Summer 2020
 - Angel Saldivia Florida International University Summer 2020
 - Eric Xu Northwestern University Summer 2018
- Students in Other Programs
 - Jesus Vento M-DCPS Summer Youth Internship Summer 2018
 - Christopher Del Rey M-DCPS Summer Youth Internship Summer 2018
- Visiting Scholars
 - Xiaomei Zhong East China Jiao Tong University Spring 2019 – present
 - Yan Wang East China Jiao Tong University Spring 2018 – Spring 2019
- Ph.D. Qualifying Exam Committee
 - Proyash Podder FIU CS Ph.D. student, Major advisor: Alex Afanasyev 2020