

Dohyung Park

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| CONTACT INFORMATION | Electrical & Computer Engineering The University of Texas at Austin 1616 Guadalupe, UTA 7.518, Austin, TX 78701 <i>E-mail:</i> dhpark@utexas.edu <i>Web:</i> http://dhpark22.github.io/ |
| RESEARCH INTERESTS | My research interests are primarily in machine learning based on large-scale optimization and high-dimensional statistics. I am also interested in online or distributed algorithms for those areas. |
| EDUCATION | <p>The University of Texas at Austin August 2011 - Present Ph.D., Electrical & Computer Engineering</p> <ul style="list-style-type: none">• Advisors : Prof. Sujay Sanghavi and Prof. Constantine Caramanis• Current GPA : 4.0/4.0 <p>Korea Advanced Institute of Science and Technology August 2008 M.S., Electrical Engineering</p> <ul style="list-style-type: none">• Thesis : Performance-Complexity Tradeoffs of Rateless Codes• Advisor : Prof. Sae-Young Chung• GPA : 4.08/4.3 <p>B.S., Electrical Engineering (Magna Cum Laude)</p> <ul style="list-style-type: none">• Minor in Computer Science• GPA : 3.71/4.3 |
| RESEARCH EXPERIENCE | <p>The University of Texas at Austin</p> <p><i>Learning unions of subspaces (a.k.a. Subspace clustering)</i></p> <ul style="list-style-type: none">- Developed algorithms to recover unions of subspaces from unlabeled points.- Derived statistical guarantee for exact clustering with conditions weaker than state-of-the-art results.- Showed competitive practical performance on motion segmentation with much lower computational cost. <p><i>Collaborative ranking from pairwise preferences</i></p> <ul style="list-style-type: none">- Proposed algorithms for ranking multiple items for each of multiple users from given pairwise preferences.- Implemented parallel algorithms on a multi-core machine. <p>Samsung Advanced Institute of Technology</p> <p><i>Mobile indoor localization systems</i></p> <ul style="list-style-type: none">- Designed algorithms to estimate indoor locations with limited infrastructure.- Developed a testbed to demonstrate the localization algorithms. <p>Korea Advanced Institute of Science and Technology</p> <p><i>Rateless codes for wireless communication systems</i></p> <ul style="list-style-type: none">- Designed a rateless code with improved computational complexity. |
| COURSES | Math/OR/Stat - Real Analysis, Theory of Probability, Functional Analysis, Numerical Linear Algebra, Linear Programming, Convex Optimization, Statistical Modelling |

EECS - Probability and Stochastic Processes, Advanced Probability, Randomized Algorithms, Machine Learning, Large-scale Learning, Sparsity/Structure/Algorithms, Scalable Machine Learning, Information Theory, Coding Theory, Communication Systems.

PUBLICATIONS

- [1] **Dohyung Park**, Joe Neeman, Jin Zhang, Sujay Sanghavi, and Inderjit S. Dhillon, "Preference Completion: Large-scale Collaborative Ranking from Pairwise Comparison," submitted.
- [2] **Dohyung Park**, Constantine Caramanis, and Sujay Sanghavi, "Greedy subspace clustering," in *Proc. Neural Information Processing Systems(NIPS)*, 2014.
- [3] Won-Yong Shin, **Dohyung Park**, and Bang Chul Jung, "Can one achieve multiuser diversity in uplink multi-cell networks?," *IEEE Transactions on Communications*, Vol. 60, No. 12, pp. 3535-3540, Dec. 2012.
- [4] Bang Chul Jung, **Dohyung Park**, and Won-Yong Shin, "Opportunistic interference mitigation achieves optimal degrees-of-freedom in wireless multi-cell uplink networks," *IEEE Transactions on Communications*, Vol. 60, No. 7, pp. 1935-1944, July 2012.
- [5] **Dohyung Park**, Joonsung Kang, and Eung Sun Kim, "Ad hoc indoor peer-to-peer tracking using relative location estimation," in *Proc. International Conference on Indoor Positioning and Indoor Navigation(IPIN)*, ETH Zurich, Switzerland, Sept. 2010.
- [6] **Dohyung Park** and Sae-Young Chung, "Performance-complexity tradeoffs of rateless codes," in *Proc. IEEE International Symposium on Information Theory(ISIT)*, Toronto, Canada, July 2008.

HONORS
& AWARDS

KAIST Governmental Fellowship
Bronze medal, Korean Olympiad in Informatics
Bronze medal, Korean Science Olympiad

TEACHING
EXPERIENCE

The University of Texas at Austin
Teaching Assistant

- Large-scale Optimization

WORK
EXPERIENCE

Samsung Advanced Institute of Technology August 2008 - July 2011
Research Staff

- Project : Mobile Indoor Localization Systems

PATENTS

- [1] Eung Sun Kim, **Dohyung Park**, Yong Kim, "Method of calculating accuracy of measuring location, and method and apparatus for measuring location of terminal using accuracy of measuring location," US2013/0080048A1, Mar. 2013.
- [2] Joon Seong Kang, Eung Sun Kim, and **Dohyung Park**, "Method and apparatus for estimating angle of arrival," US2011/0199263A1, Aug. 2011
- [3] **Dohyung Park**, Eung Sun Kim, and Joon Seong Kang, "Apparatus and method for estimating relative location," US2011/0270519A1, Nov. 2011.

SKILLS

- Programming Languages: C/C++, Python, R, MATLAB.
- Operating Systems: Windows, Mac OS, Unix/Linux