Dohyung Park

Contact Information

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Research Interests

Machine learning, Large-scale optimization

Education

The University of Texas at Austin August 2016
Ph.D., Electrical & Computer Engineering
- Advisors : Prof. Constantine Caramanis and Prof. Sujay Sanghavi
- Thesis : Efficient Non-convex Algorithms for Large-scale Learning Problems
- GPA : 4.0/4.0

Korea Advanced Institute of Science and Technology August 2008
M.S., Electrical Engineering (GPA 4.08/4.3)
B.S., Electrical Engineering (Magna Cum Laude, GPA 3.71/4.3)

Experience

Facebook, Inc. Summer 2015
Semantic embeddings of topics in the word vector space
- Designed a word/topic embedding algorithm
- Implemented a pipeline which constructs training text corpora using Python, Java, and Hive/SQL, and developed the algorithm and its unit tester in C/C++.

The University of Texas at Austin 2011 - 2016
Large-scale Collaborative ranking
- Proposed algorithms for ranking multiple items for each of multiple users from given pairwise preferences.
- Implemented parallel algorithms on a multi-core machine.

Efficient algorithm for matrix optimization
- Developed efficient algorithm for matrix convex optimization

Scalable algorithm for subspace clustering
- Developed algorithms to recover unions of subspaces from unlabeled points.
- Showed competitive practical performance on motion segmentation with much lower computational cost.

Samsung Advanced Institute of Technology 2008 - 2011
Mobile indoor localization systems
- Designed algorithms to estimate indoor locations with limited infrastructure.
- Developed a testbed to demonstrate the localization algorithms.

Honors & Awards

Bronze medal, Korean Olympiad in Informatics
Bronze medal, Korean Science Olympiad
KAIST Governmental Fellowship
KAIST Academic Full Scholarship

Selected Publications

[1] **D. Park**, J. Neeman, J. Zhang, S. Sanghavi, and I. S. Dhillon, "Preference Completion: Large-scale Collaborative Ranking from Pairwise Comparison," ICML, 2015.

[2] **D. Park**, A. Kyrillidis, C. Caramanis, and S. Sanghavi, "Finding Low-rank Solutions to Matrix Problems, Efficiently," ArXiv preprint, 1606.03168.

[3] X. Yi, **D. Park**, Y. Chen, and C. Caramanis, "Fast Algorithms for Robust PCA via Gradient Descent," NIPS, 2016.

[4] **D. Park**, C. Caramanis, and S. Sanghavi, "Greedy subspace clustering," NIPS, 2014.

[5] **D. Park**, J. Kang, and E. S. Kim, "Ad hoc indoor peer-to-peer tracking using relative location estimation," IPIN, 2010.

[6] **D. Park** and S.-Y. Chung, "Performance-complexity tradeoffs of rateless codes," ISIT, 2008.

Skills

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