Jeongyeol Kwon

Contact Information

EER 6.822, 2501 Speedway, The University of Texas at Austin, Austin, TX 78712
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Education

The University of Texas at Austin, TX
Ph.D. in Electrical and Computer Engineering 2017.8 - present

Seoul National University (SNU), Seoul, Korea
B.S. in Electrical Engineering, GPA 4.00/4.30 2008.3 - 2016.2

Seoul Science High School, Seoul, Korea
High school diploma with distinction in 2 years 2006.3 - 2008.2

Research Interests

Machine/Statistical Learning, Learning Theory, Reinforcement Learning, Large-Scale Optimization, Robust Statistics

Publication

J. Kwon and C. Caramanis, "EM Algorithm is Sample Optimal for Learning Mixtures of Well-Seperated Gaussians," *Working Paper*.

J. Kwon and C. Caramanis, "EM Converges for a Mixture of Many Linear Regressions," *to appear in the Proceedings of 23rd Artificial Intelligence and Statistics (AISTATS)*, 2020.

J. Kwon, Q. Wei, C. Caramanis, Y. Chen, and D. Davis, "Global Convergence of the EM Algorithm for Mixtures of Two Component Linear Regression," *in the Proceedings of 32nd Annual Conference on Learning Theory (COLT)*, 2019.

Research Experience

DICE (Decision, Information, and Communications Engineering), The University of Texas at Austin, TX
Grduate Research Assistant (Prof. Constantine Caramanis) 2018.1 - present

- Tight analysis on the EM algorithm for a mixture of well-separated Gaussians
- Analysis on the EM algorithm for a mixture of linear regressions
- Adversarial Examples: Robustifying DNN classifier to malicious perturbation on test image

PIL (Perceptron and Intelligence Laboratory, Seoul National University
Research Internship (Prof. Jin Young Choi) 2016.7 - 2017.4

- Multi-camera multi-object tracking in computer vision with network-flow formulation
- Group study on various first-order optimization methods

Design Project for Electrical Engineering, Seoul National University
Course Project: Computer Vision (Prof. Nam Ik Cho) 2014.8 - 2014.12

- Image-dehazing with prior knowledge on the natural scene

Work Experience

Alegion, Inc., Austin, Texas

Research Intern, Research Internship in Human-Interactive Annotation 2019.6 - 2019. 8

- Explore automated annotation algorithms/applications
- Study on image segmentation with classical computer vision algorithms
- Apply a deep-learning based human-interactive annotation tool on a real annotation task
- Development language: Python

Scientific Analog, Seoul, Korea

R&D Engineer, Program Developer for Mixed Circuit Simulator 2015.5 - 2016. 6

- Develop core module: first-order difference equation (ODE) solver for analog circuit
- Applied model-order reduction technique for faster simulation speed
- Develop scheduler and processor for events in the circuit system in a time order
- Development language: C/C++, Python, Verilog

Redduck, Inc., Seoul. Korea

Programmer, PC Game Client Developer 2011.2 - 2013.12

- Develop FPS game client in PC environment with Unreal 3 Engine
- Development language: C/C++

Teaching Experience

The University of Texas at Austin, Austin, TX

Teaching Assistant, EE 381V, Large Scale Optimization Fall 2018

Teaching Assistant, EE 381V-SE, Introduction to Convex Optimization Spring 2018

Seoul National University, Seoul, Korea

Teaching Assistant, Convex Optimization Fall 2016

Honors and Awards

Graduate Study Scholarship, The Kwanjeong Educational Foundation, 2017 - 2021

- Four-year scholarship for doctorate program.

President Scholarship for Undergraduate, Korea Student Aid Foundation 2008 - 2014

- Four-year scholarship for undergradute program.

International Collegiate Programming Contest, Association for Computing Machinery 2010

- 6th Place in Daejeon Region
- 2nd Place in Hanoi Region

Korea Olympiad in Informatics, Ministry of Science, ICT and Future Planning 2007

- Gold in Area of High School

Korea Physics Olympiad, The Korean Physical Society 2007

- Silver in Area of High School

Other

- Language: English, Japanese
- Specialty: Statistical Learning Theory, Optimization, Reinforcement Learning
- Computer Skills: C/C++, Python, MATLAB, LaTeX