Burak Bartan

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RESEARCH INTERESTS

Machine learning, neural networks, signal processing, convex optimization, distributed computing, randomized algorithms.

EDUCATION

Stanford University, Stanford, CA USA
Ph.D., Electrical Engineering, (2016 onwards) *(Expected graduation date: June 2022)*
Stanford University, Stanford, CA USA
M.Sc., Electrical Engineering (2016 - 2018)
Bilkent University, Ankara, Turkey
B.S., Electrical Engineering (2012 - 2016)

PROFESSIONAL EXPERIENCE

Research Assistant — Stanford University
September 2016 onwards — Stanford, CA, USA
PhD advisor: Prof. Mert Pilanci

Research Intern — Qualcomm Technologies, Inc.
June 2021 to September 2021 — San Diego, CA, USA
Qualcomm AI research

Research Engineer — Aselsan Inc. Research Center
January 2016 to September 2016 — Ankara, Turkey
Artificial Intelligence and Information Technologies Research Program

TEACHING EXPERIENCE

Course Assistant — Stanford University
Course assistant for the following courses: — Stanford, CA, USA

- EE364A: Convex Optimization I (Summer 2020)
- EE264: Digital Signal Processing (Winter 2020, Winter 2021)
- EE269: Signal Processing for Machine Learning (Fall 2019)
- MS&E111/211: Introduction to Optimization (Spring 2018, Winter 2018)
- EE263: Introduction to Linear Dynamical Systems (Summer 2017, Fall 2020)

HONORS AND AWARDS

- Bilkent University Undergraduate Fellowship, September 2011 to June 2016.
- Graduated as 2nd out of 160 in class of 2016, Bilkent University Electrical Engineering.
- Ranked 472nd among 1.5 million, University Entrance Examination in Turkey, 2011.

SKILLS

Python, Matlab

SELECTED PUBLICATIONS

- Deep Learning, Optimization, Distributed Computing:

B. Bartan, M. Pilanci. *Training Quantized Neural Networks to Global Optimality via Semidefinite Programming.* International Conf. on Machine Learning (ICML), 2021.

B. Bartan and M. Pilanci. *Neural Spectrahedra and Semidefinite Lifts: Global Convex Optimization of Polynomial Activation Neural Networks in Fully Polynomial-Time.* Preprint, arXiv:2101.02429, 2021.

M. Derezinski, **B. Bartan**, M. Pilanci, M. W. Mahoney. *Debiasing Distributed Second Order Optimization with Surrogate Sketching and Scaled Regularization.* Advances in Neural Information Processing Systems (NeurIPS), 2020.

B. Bartan and M. Pilanci. *Distributed Averaging Methods for Randomized Second Order Optimization.* Preprint, arXiv:2002.06540, 2020.

B. Bartan and M. Pilanci. *Straggler Resilient Serverless Computing Based on Polar Codes.* 2019 57th Annual Allerton Conference on Communication, Control, and Computing (Allerton).

- Signal Processing, Information Theory:

B. Bartan and M. Wootters. *Repairing Multiple Failures for Scalar MDS Codes.* 2017 55th Annual Allerton Conference on Comm., Control, and Computing (Allerton).

A. Koc, **B. Bartan**, H.M. Ozaktas. *Discrete Linear Canonical Transform Based on Hyperdifferential Operators.* IEEE Transactions on Signal Processing 67 (9), 2237-2248.

A. Koc, **B. Bartan**, H.M. Ozaktas. *Discrete Scaling Based on Operator Theory.* Digital Signal Processing, 2020.

** Please visit my personal website at* `http://web.stanford.edu/~bbartan/` *for the full list of publications.*