Yusuf Yiğit Pilavcı

PERSONAL DETAILS

Address	GIPSA-Lab, 11 Rue des Mathématiques, 38400 Saint-Martin-d'Hères
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Webpage	https://y2p.github.io/

EDUCATION

PhD Student — 2019 Dec.- Present

GIPSA-LAB, GAIA Team
Université Grenoble Alpes
Thesis: Wilson's Algorithm for Randomized Linear Algebra
Currently working as a PhD student at GIPSA-Lab under supervision of Nicolas Tremblay, Simon Barthelmé and Pierre-Olivier Amblard. The main goal of the thesis is to investigate the applications of the links between algebraic graph theory, random spanning forests (RSF) on the graphs and efficient randomized methods for linear algebra (randomized linear algebra). In previous research, we have already introduced several applications of random forests on graphs,such as estimators for the inverse trace or for graph signal smoothing. The main direction of this thesis is to exploit Wilson's algorithm (a fast way to sample RSFs) in a wider range of linear algebra problems, for example to build estimators for matrix inversion, singular value decomposition, eigendecomposition.

Research Intern — 2019 Mar.- Sept.

GIPSA-LAB
Université Grenoble Alpes
Master Thesis on Random Spanning Forests, Theory and Applications

Master of Science — 2017-2019
Politecnico di Milano
Computer Science and Engineering
Final Grade : 108.0 / 110

Bachelor's degree — 2012-2017
Middle East Technical University
Department of Electrical and Electronics Engineering
CGPA 3.79 / 4.00 (10th/375)

Minor Degree — 2014-2017
Middle East Technical University
Department of Computer Engineering

PROJECTS AND PUBLICATIONS

1. Y. Y. Pilavci, P.-O. Amblard, S. Barthelme, and N. Tremblay. Variance reduction for inverse trace estimation via random spanning forests. *arXiv preprint arXiv:2206.07421*, 2022

2. Y. Pilavcı, P.-O. Amblard, S. Barthelmé, and N. Tremblay. Variance reduction in stochastic methods for large-scale regularised least-squares problems. *arXiv preprint arXiv:2110.07894*, 2021

3. Y. Y. Pilavci, P.-O. Amblard, S. Barthelme, and N. Tremblay. Graph tikhonov regularization and interpolation via random spanning forests. *IEEE Transactions on Signal and Information Processing over Networks*, 2021

4. Y. Y. Pilavci, P.-O. Amblard, S. Barthelme, and N. Tremblay. Smoothing graph signals via random spanning forests. In *ICASSP 2020-2020 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pages 5630–5634. IEEE, 2020

5. Y. Y. Pilavci, E. T. Guneyi, C. Cengiz, and E. Vural. Graph domain adaptation with localized graph signal representations. *arXiv preprint arXiv:1911.02883*, 2019

6. Y. Y. Pilavci and N. Farrugia. Spectral graph wavelet transform as feature extractor for machine learning in neuroimaging. In *ICASSP 2019-2019 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pages 1140–1144. IEEE, 2019

7. M. Turan, Y. Y. Pilavci, I. Ganiyusufoglu, H. Araujo, E. Konukoglu, and M. Sitti. Sparse-then-dense alignment-based 3d map reconstruction method for endoscopic capsule robots. *Machine Vision and Applications*, 29(2):345–359, 2018

INDUSTRIAL EXPERIENCE

ASELSAN,Ankara,Turkey 2017 Feb - May

Candidate Engineer

Trained and worked as software engineer by using C++/C, Unix and Java

ASELSAN,Ankara,Turkey 2016 June - July

Internship

Studied and observed on Real Time Operating Systems on multi-core processors

Huawei, Ankara, Turkey 2015 June - July

Internship

Studied and observed on fiber optical transmission systems and signal modulations

SKILLS

Languages	English (fluent), Turkish (native)
Programming	C/C++, Python, Julia
Software	MATLAB, LaTeX