

Yusuf Yiğit Pilavcı

PERSONAL DETAILS

<i>Address</i>	GIPSA-Lab, 11 Rue des Mathématiques, 38400 Saint-Martin-d'Hères
<i>Mobile</i>	(+33 6 13 44 95 64)
<i>Mail</i>	yusuf-yigit.pilavci@gipsa-lab.fr
<i>Github</i>	https://github.com/Y2P

EDUCATION

PhD Student

GIPSA-LAB, GAIA Team
Université Grenoble Alpes

Ongoing Thesis about Wilson's Algorithm for Randomized Linear Algebra

2019
Dec.- Present

Research Intern

GIPSA-LAB
Université Grenoble Alpes

Master Thesis on Random Spanning Forests, Theory and Applications

2019
Mar.- Sept.

Master of Science

Politecnico di Milano
Computer Science and Engineering

Final Grade : 108.0 / 110

2017-2019

Bachelor's degree

Middle East Technical University
Department of Electrical and Electronics Engineering

CGPA 3.79 / 4.00 (10th/375)

2013-2017

Minor Degree

Middle East Technical University
Department of Computer Engineering

2014-2017

RESEARCH EXPERIENCE

Wilson's Algorithm for Randomized Linear Algebra

PhD Student

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, etc.

2019
Dec - Present

Random Spanning Forests: Theory and Applications

Research Intern

Worked as a research intern at GIPSA-Lab, Grenoble/France, under supervision of Nicolas Tremblay, Simon Barthelmé and Pierre-Olivier Amblard. In this research, the links between random spanning

2019
March - Sept

forests and determinantal point processes are investigated by leveraging the tools of linear algebra. In turn, we proposed a novel and efficient algorithm for smoothing graph signals and presented both theoretical and experimental analyses of the proposed method. Presented at ICASSP 2020.

Spectral Graph Wavelet Analysis on Brain Signals

2018
July - Sept

Research Intern

Worked as a summer intern at IMT Atlantique, Brest/France, under supervision of Assoc.Prof. Nicolas Farrugia. In this research, worked on spectral graph wavelet (SGW) analysis on brain graphs and signals, specifically using FMRI images. The main motivation is to investigate the possible improvements with SGW analysis for the purpose of extracting more meaningful representation of brain signals in terms of machine learning and decoding problems defined in neuro-science literature. Presented at ICASSP 2019

Signal Processing and Domain Adaptation on Graphs

2017 - 2019

Volunteer Researcher

Worked on graph signal processing. As an undergraduate researcher, conducted researches on wavelet transform and domain adaptation problems with Ass.Prof Elif Vural. In this project, worked intensively on both mathematical modelling and also implementation. Paper under submission.

3D Map Reconstruction for the Endoscopic Capsule Robot

2016
June - Sept

Undergraduate Researcher

Conducted research in collaboration with Max Planck Institute for Intelligent Systems. In this project, 3D Map Reconstruction is applied to videos recorded by robotic endoscopy capsules. Worked on implementation, algorithms and creating a workflow. Paper published in Machine Vision and Applications.

Control of a 5-DOF Robot Arm (Teachmover)

2015
July - Aug

Volunteer Summer Internship

Worked on design and implementation of a software that controls a robotic arm with 5-DOF.

Traffic Analysis from Quadrotor Camera

2014 - 2015

Undergraduate Researcher

Worked on computer vision algorithms for an automated traffic analysis system. Implemented algorithms for image registration, background - foreground subtraction, optical flow.

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

<i>Languages</i>	English (fluent), Turkish (native)
<i>Programming</i>	C/C++, Python, Julia
<i>Software</i>	MATLAB, L ^A T _E X