

# Abdurrahman Yaşar



## CONTACT INFORMATION

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## EDUCATION

**Georgia Institute of Technology, USA**, PhD. Computer Science 2015 - 2021 (Expected)  
Advisor; Ümit V. Çatalyürek  
*Dissertation*: Towards Performance Portable Graph Algorithms  
**Bilkent University, Turkey**, MSc. Computer Engineering 2013 - 2015  
Advisor; Buğra Gedik  
*Dissertation*: Scalable Layout of Large Graphs on Disk  
**Galatasaray University, Turkey**, B.Sc. Computer Engineering 2007 - 2012

## PROFILE

Ph.D. Candidate in Computer Science. Research interest in large-scale graph mining and processing. Seeking full time employment starting May'21.

## HONORS & AWARDS

- Travel Award: SIAM Conference on Parallel Processing for Scientific Computing 2020
- Two of the MIT/Amazon/IEEE HPEC 2018 Graph Challenge Innovation Award Winners 2019
- Travel Award: SIAM Conference on Computational Science and Engineering 2019
- One of the four invited students to Chesapeake Large-Scale Analytics Conference 2018
- One of the MIT/Amazon/IEEE HPEC 2018 Graph Challenge Champions 2018
- Excellence Study Grant Provided by the Embassy of France in Turkey 2013
- First Grade, Galatasaray University 2012
- Special Jury Award, Team ONGUN, IBM Software Academy, Turkey 2012
- French Institute for Research in Computer Science and Automation Fellowship 2011
- Galatasaray Education Foundation (GEV) Bachelors Degree Fellowship. 2008

## EXPERIENCE

**Georgia Institute of Technology**, College of Computing, Atlanta GA Aug. 2015 -  
*Graduate Research Associate*  
**Sandia National Laboratories**, Albuquerque NM May. 2019 - Aug. 2019  
*Graduate Summer Intern*  
**Sandia National Laboratories**, Albuquerque NM May. 2018 - Aug. 2018  
*Graduate Summer Intern*  
**IBM Almaden Research Center**, San Jose CA May. 2016 - Aug. 2016  
*Graduate Summer Intern*  
**Inria - Lille Nord Europe**, Equipe DART, Lille France May. 2011 - Sep. 2011  
*Summer Intern*

## RESEARCH

My research consist of three pillars; data/computation partitioning, algorithm design, and portability. These problems are interrelated, hence effective solutions require attention to all areas.

### DATA/COMPUTATION PARTITIONING

**A Novel Subgradient-based Method for d-Dimensional Rectilinear Partitioning** 2020  
*submitted to IEEE International Parallel & Distributed Processing Symposium (IPDPS)*  
M. F. Balin, X. An, **A. Yaşar**, L. Song and Ü. V. Çatalyürek  
**On Symmetric Rectilinear Matrix Partitioning** 2020  
*submitted to SIAM Journal on Scientific Computing (SISC)*  
**A. Yaşar**, M. F. Balin, X. An, K. Sancak and Ü. V. Çatalyürek

Distributed block formation and layout for disk-based management of large-scale graphs 2017  
*Distributed and Parallel Databases (DPDS)*  
**A. Yaşar**, B. Gedik, H. Ferhatosmanolu

## BLOCK-BASED ALGORITHM DESIGN & GRAPH MINING

Scalable Triangle Counting on Distributed-Memory Systems (one of the Graph Challenge Innovation Award Winners) 2019  
*IEEE High Performance Extreme Computing Conference (HPEC)*  
S. Acer, **A. Yaşar**, S. Rajamanickam, M. M. Wolf and Ü. V. Çatalyürek

Fast Triangle Counting Using Cilk (one of the Graph Challenge Champions) 2018  
*IEEE High Performance Extreme Computing Conference (HPEC)*  
**A. Yaşar**, S. Rajamanickam, M. M. Wolf, J. W. Berry, Ü. V. Çatalyürek

An Iterative Global Structure-Assisted Network Aligner 2018  
*ACM International Conference on Knowledge Discovery & Data Mining (KDD)*  
**A. Yaşar** and Ü. V. Çatalyürek

SiNA: A Scalable Iterative Network Aligner 2018  
*IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM)*  
**A. Yaşar**, B. Uçar and Ü. V. Çatalyürek

## PERFORMANCE PORTABILITY

BBTC: A Block-Based Triangle Counting Algorithm on Heterogeneous Environments 2020  
*submitted to IEEE Transactions on Parallel and Distributed Systems (TPDS)*  
**A. Yaşar**, S. Rajamanickam, J. W. Berry and Ü. V. Çatalyürek

Linear Algebra-Based Triangle Counting via Fine-Grained Tasking on Heterogeneous Environments (one of the Graph Challenge Innovation Award Winners) 2019  
*IEEE High Performance Extreme Computing Conference (HPEC)*  
**A. Yaşar**, S. Rajamanickam, M. M. Wolf, J. W. Berry, J. S. Young and Ü. V. Çatalyürek

Programming strategies for irregular algorithms on the Emu Chick 2019  
*ACM Transactions on Parallel Computing (TOPC) - to appear*  
E. Hein, S. Eswar, **A. Yaşar**, B. Ucar, Ü. V. Çatalyürek, T. Conte, J. Riedy, R. Vuduc, and J. S. Young

PATENT Distributing Data by Successive Spatial Partitioning 2017  
*Patent : US10430104B2*  
A. Gupta, S. Seshadri, **A. Yaşar**

SKILLS

- C++ (OpenMP, Cilk, TBB, Kokkos), C, Cuda, Python

PERSONAL

- **Languages:** Turkish (native), English (professional proficiency), French (limited proficiency)
- **Gender:** Male
- **Citizenship:** Turkey