Ali Çivril

Contact
Address: Atlas Üniversitesi Vadi Kampüsü, Anadolu Cad. No:40, 34403 Kağıthane İstanbul
E-mail: ali.civril@atlas.edu.tr

Personal
Date of Birth: May 29, 1982
Place of Birth: Çivril, Denizli, Turkey
Citizenship: Turkey

Research Interests
- Scheme-theoretic approach to algorithms and computational complexity.
- Design and analysis of algorithms in the classical sense. In particular, approximation algorithms, network design problems, combinatorial optimization.

Education

RENSSELAER POLYTECHNIC INSTITUTE, Troy, New York, USA
    Ph.D. - Computer Science   December 2009

RENSSELAER POLYTECHNIC INSTITUTE, Troy, New York, USA
    M.S. - Computer Science   December 2007

BILKENT UNIVERSITY, Ankara, Turkey
    B.S. - Computer Engineering   June 2004

Appointments

ATLAS UNIVERSITY, Istanbul, Turkey
    Associate Professor - Computer Engineering   September 2022 - now

ISTINYE UNIVERSITY, Istanbul, Turkey
    Associate Professor - Computer Engineering   February 2020 - August 2022

ANTALYA BILIM UNIVERSITY, Antalya, Turkey
    Associate Professor - Computer Engineering   August 2015 - July 2016
    Assistant Professor - Computer Engineering   September 2014 - August 2015

MELIKŞAH UNIVERSITY, Kayseri, Turkey
    Assistant Professor - Computer Engineering   April 2010 - June 2014

AT&T LABS, INC., Florham Park, NJ, USA
    Intern   June 2007 - August 2007

RENSSELAER POLYTECHNIC INSTITUTE, Troy, NY, USA
    Research Assistant   January 2007 - June 2008
    Teaching Assistant   August 2004 - December 2006

Military Service

TURKISH ARMED FORCES
    Soldier - 6 months   August 2010 - February 2011

Publications

SUBMITTED MANUSCRIPTS

1. A. Çivril, "3/2-Approximation for the Matching Augmentation Problem".
2. A. Çivril, "9/7-Approximation for Two-Edge-Connectivity".

3. A. Çivril, "A Unified Approach for Approximating 2-Edge-Connected Spanning Subgraph an 2-Vertex-Connected Spanning Subgraph".

4. A. Çivril, M. Mirza Biçer, B. Tahsin Tunca, and M. Yasin Kangal, "An Improved Integrality Gap for Steiner Tree".

5. A. Çivril, "4/3-Approximation of Graphic TSP".

6. A. Çivril, "Scheme-theoretic Approach to Computational Complexity I. The Separation of P and NP".

Journal Publications

1. A. Çivril, *Approximation of Steiner Forest via the Bidirected Cut Relaxation*, Journal of Combinatorial Optimization, 38(4): 1196-1212, 2019.

2. A. Çivril, *Sparse Approximation is Provably Hard under Coherent Dictionaries*, Journal of Computer and System Sciences, 84(1): 32-43, 2017.

3. A. Çivril, *Column Subset Selection Problem is UG-hard*, Journal of Computer and System Sciences, 80(4): 849-859, 2014.

4. A. Çivril, *A Note on the Hardness of Sparse Approximation*, Information Processing Letters, 113(14-16): 543-545, 2013.

5. A. Çivril and M. Magdon-Ismail, *Exponential Inapproximability of Selecting a Maximum Volume Sub-matrix*, Algorithmica, 65(1): 159-176, 2013.

6. A. Çivril and M. Magdon-Ismail, *Column Subset Selection via Sparse Approximation of SVD*, Theoretical Computer Science, 421: 1-14, 2012.

7. A. Çivril and M. Magdon-Ismail, *On Selecting a Maximum Volume Sub-matrix of a Matrix and Related Problems*, Theoretical Computer Science, 410(47-49): 4801-4811, 2009.

8. U. Dogrusoz, E. Giral, A. Cetintas, A. Civril, and E. Demir, *A Layout Algorithm For Undirected Compound Graphs*, Information Sciences, 179: 980-994, 2009.

Conference Proceedings

1. A. Çivril and M. Magdon-Ismail, *Deterministic Sparse Column Based Matrix Reconstruction via Greedy Approximation of SVD,* 19th International Symposium on Algorithms and Computation (ISAAC 2008), Gold Coast, Australia, December 15-17, 2008.

2. Yehuda Koren and A. Çivril, *The Binary Stress Model for Graph Drawing,* 16th International Symposium on Graph Drawing (GD 2008), Heraklion, Crete, Greece, Sept 21-24, 2008.

3. A. Çivril, M. Magdon-Ismail and E. Bocek-Rivele, *SSDE: Fast Graph Drawing Using Sampled Spectral Distance Embedding,* 14th International Symposium on Graph Drawing (GD 2006), Karlsruhe, Germany, Sept 18-20, 2006.

4. A. Çivril and M. Magdon-Ismail, *SDE: Graph Drawing Using Spectral Distance Embedding,* 13th International Symposium on Graph Drawing, 2005.

5. U. Dogrusoz, E. Giral, A. Cetintas, A. Civril, and E. Demir, *A Compound Graph Layout Algorithm for Biological Pathways,* 12th International Symposium on Graph Drawing (GD 2004), NYC, NY, Sept. 29-Oct. 2, 2004.

Research Grants

1. Principal Investigator, TÜBİTAK (Scientific and Technological Research Council of Turkey). *New Approximation Algorithms for Steiner Forest and Related Problems.* Budget: 157,225 TRY ($81,000 at that time), April 2013-February 2016, Project No: 112E192.

Students	Bilge Kağan Dedetürk, M.S., EECS, Melikşah University, June 2014, "On a greedy heuristic for the Steiner forest problem".
	Osman Melih Kürtüncü, M.S., EECS, Melikşah University, June 2014, "On a greedy heuristic for the multicommodity rent-or-buy problem".

Honors and Awards

2013 Career Development Grant, TÜBİTAK*.

2008 Fellowship, Rensselaer Polytechnic Institute.

2000 Top 0.1% in the university entrance exam. Full scholarship, Bilkent University.

1999 Silver medal, 7th Turkish National Mathematical Olympiad, TÜBİTAK*.

1999 Regional second place, 7th Turkish National Informatics Olympiad, TÜBİTAK*.

1997 Bronze medal, 2nd Turkish Middle School Mathematical Olympiad, TÜBİTAK*.

*TÜBİTAK: Scientific and Technological Research Council of Turkey

Professional Activities

JOURNALS REFEREED

- SIAM Journal on Matrix Analysis and Applications
- Networks
- Journal of Artificial Intelligence Research
- Computational Statistics and Data Analysis

CONFERENCES REFEREED

- EUROVIS 2008
- COCOON 2008

Teaching

ATLAS ÜNIVERSITESI, İstanbul, Türkiye

September 2022 - now

- Theory of Computation: Fall 2022.
- Veri Yapıları (Data Structures): Fall 2022, Fall 2023, Fall 2024.
- Data Structures: Fall 2023, Fall 2024.
- Mathematics for Business: Fall 2022.
- Discrete Mathematics: Spring 2023, Spring 2024.
- Applied Statistics: Spring 2024.

ISTINYE UNIVERSITY, Istanbul, Turkey

February 2020 - August 2022

- Advanced Algorithm Design (graduate): Fall 2021.
- Networking and Online Games: Spring 2021
- Basic Programming 2 (C++): Spring 2021, Spring 2022.
- Problem Solving with Computers in C++: Spring 2021, Spring 2022.
- Introduction to Game Programming (C#): Fall 2020, Fall 2021.
- Data Structures and Algorithms: Fall 2020, Fall 2021.
- Basic Programming 2 (C++): Spring 2020.
- Problem Solving with Computers in C++: Spring 2020.
- Algorithms and Basic Data Structures: Spring 2020, Fall 2021.

ANTALYA BILIM UNIVERSITY, Antalya, Turkey

- Discrete Mathematics: Fall 2014.
- Approximation Algorithms (graduate): Fall 2014, Fall 2015.
- Data Structures: Spring 2015.
- Computer Organization and Design: Spring 2015, Spring 2016.
- Principles of Programming Languages: Fall 2015.
- Formal Languages and Automata Theory: Spring 2016.

MELIKŞAH UNIVERSITY, Kayseri, Turkey

February 2011 - June 2014

- Nesneye Yönelik Programlama (Object Oriented Programming): Spring 2011.
- Bilgisayar Programlama (Computer Programming): Spring 2011.
- Basic Information Technology: Fall 2011.
- Ayrık Matematik (Discrete Mathematics): Fall 2011, Fall 2012, Fall 2013.
- Lineer Cebir ve Uygulamaları (Linear Algebra and Its Applications): Spring 2012, Spring 2013.
- Algoritma Analizi (Algorithm Analysis): Spring 2013, Spring 2014.
- Hesaplama Teorisi (Theory of Computation): Fall 2013.
- Combinatorial Optimization (graduate): Fall 2011.
- Approximation Algorithms (graduate): Spring 2012.
- Graph Theory (graduate): Fall 2012.
- Advanced Algorithm Design and Analysis (graduate): Spring 2013.
- Computational Complexity (graduate): Spring 2014.

Languages
- Turkish (native)
- English (fluent)
- French (can read mathematical texts)

Other Interests and Skills
- Game Development, Game Design, Game Programming
- Unity (Proficient)
- C# (Proficient, not including .NET)
- C++ (Proficient)