

Education

Ph.D., Operations Research and Financial Engineering, Princeton University Advisors: Prof. Amir Ali Ahmadi, Prof. Maria Chudnovsky <i>Research interests:</i> Graph Theory, Combinatorial Optimization, Polynomial Optimization	Sept. 2016 – Present
M.S. in Industrial Engineering, Bogazici University Advisor: Prof. Tinaz Ekim <i>Thesis:</i> Edge-Extremal Graphs under Degree and Matching Number Restrictions	June 2016
B.S. in Mathematics, Double Major, Bogazici University	January 2015
B.S. in Industrial Engineering, Bogazici University	January 2015
Istanbul Lycée de Galatasaray	June 2009

Honors and Awards

The Bennett Stewart Fund, ORFE, Princeton University A gift fund from G. Bennett Stewart '74 to support scholarly activities	May 2019
SEAS Professional Development Travel Grant, Princeton University Professional Development Travel Funds	April 2019
Best Poster Award in Optimization Theory, Princeton Day of Optimization	Sept. 2018
Gordon Wu Fellowship, Princeton University Princeton's highly selective and prestigious award for graduate study in engineering	2016 – 2020
TUBITAK-ARRS Fellowship, Turkey-Slovenia Bilateral Research Project "New trends in matching theory", Project No: 213M620	2014 – 2016
Superior Scholarship, Deloitte Education Foundation Merit-based scholarship to support the training of creative, investigative and innovative leaders	2009 – 2014
Dean's High Honor List, Bogazici University Each academic term between 2010 – 2015	2010 – 2015
State Scholarship, Turkey Exam-based scholarship consisting of a monthly stipend and a boarding school tuition grant	2000 – 2009

Publications and Preprints

- Graphs with polynomially many minimal separators.**
Submitted. Joint work with T. Abrishami, M. Chudnovsky, S. Thomassé, N. Trotignon, and K. Vušković. [\[arXiv\]](#)
- Evolution of Q -values for Deep Q-Learning in stable baselines.**
Submitted. Joint work with M. Andrews and K. Palyutina. [\[arXiv\]](#)
- New examples of minimal non-strongly-perfect graphs.**
To appear in *Discrete Mathematics*. Joint work with M. Chudnovsky and P. Seymour. [\[arXiv\]](#)
- Strongly perfect claw-free graphs - a short proof.**
To appear in *Journal of Graph Theory*. Joint work with M. Chudnovsky. [\[arXiv\]](#)
- Maximum number of edges in claw-free graphs whose maximum degree and matching number are bounded.**
Discrete Mathematics, 340(5): 927-934, 2017. Joint work with T. Ekim and P. Heggenes.
- On matching extendability of lexicographic products.**
RAIRO - Oper. Res., 51(3): 857-873, 2017. Joint work with N. Chiarelli, T. Ekim, D. Gozuepek, and S. Miklavič.
- Equimatchable graphs are C_{2k+1} -free for $k \geq 4$.**
Discrete Mathematics, 339(12): 2964-2969, 2016. Joint work with T. Ekim, D. Gozuepek, and M. Shalom.

Talks

<i>“Sums of Separable and Quadratic Polynomials”</i>	Nov. 2020
INFORMS Annual Meeting 2020 (virtual)	
<i>“A Sum of Squares Characterization of Perfect Graphs”</i>	May 2020
MIT, LIDS Research Group Meeting (virtual), Cambridge, MA	
Bogazici University, Department of Industrial Engineering, Istanbul, Turkey	
University of Washington, CS Theory Seminar, Seattle, WA	
INFORMS Annual Meeting 2019, Seattle, WA	
Cornell ORIE Young Researchers Workshop 2019, Ithaca, NY	
Internal MURI Workshop - Verifiable, Control-Oriented Learning On The Fly, Austin, TX	
<i>“Strongly Perfect Claw-Free Graphs - A Short Proof”</i>	Sept. 2019
Waterloo Coloring Conference 2019, Ontario, Canada	
<i>“Deep Reinforcement Learning for Network Control”</i>	Sept. 2019
NOKIA Bell Labs, Math & Algorithms Theory Seminar, Murray Hill, NJ	
<i>“Edge-Extremal Graphs under Degree and Matching Number Restrictions”</i>	June 2019
Charles University Noon Seminar, Dept. of Applied Math., Prague, Czechia	
Design Theory, Graph Theory and Combinatorics Workshop, Istanbul, Turkey	
<i>“A Combinatorial Approach for Optimal Coloring of Perfect Graphs”</i>	August 2018
MOPTA 2018, Lehigh University, Bethlehem, PA	
<i>“Equimatchable Graphs are C_{2k+1}-free for $k \geq 4$”</i>	May 2015
Cologne-Twente Workshop on Graphs and Combinatorial Optimization, Istanbul, Turkey	

Other Attended Conferences/Workshops

Banff IRS - New Perspectives in Colouring and Structure, Alberta, Canada*	March 2020
<i>*Held virtually due to concern over COVID-19</i>	
Dagstuhl Seminar - Graph Coloring: from Structure to Algorithms, Wadern, Germany	June 2019
<i>Editorial coordinator supporting the seminar organizers in preparing the report for the Dagstuhl Seminar</i>	
Barbados Graph Theory Workshop 2018, 2019, Holetown, Barbados	April 2018, 2019
Princeton Day of Optimization: Optimization, Control, and Machine Learning, Princeton, NJ	Sept. 2018
<i>Best Poster Award in Optimization Theory</i>	
WG 2016, International Workshop on Graph-Theoretic Concepts in CS, Istanbul, Turkey	June 2016
<i>Member of Organizing Committee</i>	

Teaching Experience

Duties: Teaching stand-in lectures for instructor (class size ≥ 110), holding weekly office hours, and grading.

Assistant in Instruction, Princeton University

• Convex and Conic Optimization	<i>Prof. Amir Ali Ahmadi</i>	Spring 2019, 2021
• Introduction to Graph Theory	<i>Prof. Maria Chudnovsky</i>	Spring 2018
• Computing and Optimization	<i>Prof. Amir Ali Ahmadi</i>	Fall 2017, 2018, 2019

Teaching Assistant, Bogazici University

• Advanced Graph Theory	<i>Prof. Tinaz Ekim</i>	Spring 2016
• Optimal Control Theory	<i>Prof. Mustafa Akan</i>	Spring 2016
• Graph Algorithms and Applications	<i>Prof. Tinaz Ekim</i>	Fall 2015
• Nonlinear Models in Operations Research	<i>Prof. Kuban Altinel</i>	Fall 2015

Student Assistant, Bogazici University

• Graph Algorithms and Applications	<i>Prof. Tinaz Ekim</i>	Fall 2013, 2014
• Discrete Mathematics	<i>Prof. Ozlem Beyarslan</i>	Spring 2013

Academic Service and Professional Activities

Peer Reviewer

- Journal of Combinatorial Theory - Series B
- Journal of Graph Theory
- Electronic Journal of Combinatorics
- Mathematical Methods of OR
- Conferences: WG 2019, MFCS 2019

Session Organizer at INFORMS Annual Meeting: “Polynomial Optimization” Oct. 2019

Student Coordinator of the Princeton Optimization Seminar 2017 – Present

Duties: Inviting speakers and coordinating the daily schedule

Past talks: <https://orfe.princeton.edu/events/optimization-seminar/past>

Student Supervisor of Senior Theses in ORFE 2017 – Present

Helping undergraduate students advised by Prof. Amir Ali Ahmadi in their independent research conducted throughout the senior year

Member of Organizing Committee at WG 2016 June 2016

International Workshop on Graph-Theoretic Concepts in Computer Science

Research Visits

Charles University, Prague, Czechia – Martin Loebl, Irena Penev June 2019

University of Bergen, Norway – Pinar Heggernes Sept. 2015

University of Primorska, Slovenia – Stefko Miklavic, Martin Milanic Sept. 2014, Jan. 2015

Volunteer Math Expert at the Julia Robinson Math Festival April 2017

An event aimed at inspiring primary school students to pursue mathematics

Nesin Mathematics Village, Izmir, Turkey July 2008, 2011, 2012

A small village to learn, teach, and think about mathematics in peaceful remoteness: <http://www.nesinkoyleri.org/>

Industry Experience

Data Science Intern, McKinsey & Company Summer 2020

Project: Development of advanced analytics models to optimize underlying business problems by applying state-of-the-art quantitative tools and modeling techniques

Bell Labs Summer Intern, Math & Algorithms Team, Murray Hill Summer 2019

Algorithms, Analytics, Augmented Intelligence and Devices (AAAID) Research Lab

Project: Deep reinforcement learning for network control problems

Production Planning, I.E. Ulagay Pharmaceutical Industry, Istanbul Summer 2013

Project: Experimental studies intended to provide supporting data to resolve technical issues encountered during drug development and delivery technologies

Information Technology, HSBC Turkey, Istanbul Winter 2013

Project: Assisting in SQL database build and maintenance

Enterprise Risk Services, Deloitte Turkey, Istanbul Summer 2012

Project: Sent to three different fieldworks to assess the clients’ data risk management and to establish internal control systems by querying and analyzing data sets to discover patterns and deliver meaningful insights

Miscellaneous

Extracurricular Activities

- President of Turkish Graduate Student Association, Princeton University, 2019-2020
- Vice President of German Graduate Student Association, Princeton University, 2017-2018
- Head of Student Representative Board, Faculty of Engineering, Bogazici University, 2012-2014
- Member of Turkish Mathematical Society (TMD), since 2015
- Member of Galatasaray Sports Club, since 2009

Skills

- **Programming:** Python, MATLAB
- **Languages:** Turkish (Native), English (Fluent), French (Fluent)