



Danial Vahabli

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I am a young researcher interested in applying Mathematical and Computational tools such as Game Theory, Agent-Based Modelling, Statistics, Statistical Physics, and Machine Learning to investigate Social Systems.

Education

Bachelor of Science in Physics | 2018 - Present
Middle East Technical University, Ankara, Turkey
CGPA 3.77/4

Ranked in the top 6% of the Department
Concentrated in Mathematical Physics

Minor In Sociology | 2020 - Present
Middle East Technical University, Ankara, Turkey
CGPA 4/4

High School Pre-University (Senior Year) | 2017 - 2018
22 Behmen Ankara, Ankara, Turkey
CGPA 19.09/20
Ranked First in the School

High School Diploma | 2014 - 2017
National Organization for Development of Exceptional Talents, Urmia, Iran
CGPA: 18.91/20

Research Experience

Intern of Prof. Tamás Vicsek
April 2021 - Present
Investigating the collective motion of agents in a medium with obstacles

Intern at Center for Complex Network Research, Northeastern University, Boston, USA. Under the supervision of Prof. Albert-László Barabási.
November 2021 - February 2022
Worked on the science of success project.
studied the factors leading to the academic success of scholars.

Undergraduate Research Assistant at Simply Complex Lab, Bilkent University, Ankara. Under the supervision of Prof. Serim Ilday
August 2020 - February 2022
studied the collective behavior of polystyrene particles dispersed water

Senior Project, Under the supervision of Prof. Hande Toffoli
October 2021 - January 2022
Project Title: Exploring Descriptors and Machine Learning
Compared different methods for predicting the physical properties of bio-materials given their structure

Undergraduate Research Assistant at Prof. Alpan Bek's Lab
September 2019 - June 2020
Developed a LabView program to control an experimental setup

Research Interests

Social Complexity, Computational Social Science, Identity, Social Media analysis, Network Science, Social Networks Analysis, Collective Behaviour, Collective Motion

Publications

- Ü Seleme Nizam, Ghaith Makey, Michaël Barbier, S Süleyman Kahraman, Esin Demir, Ehsan E Shafigh, Sezin Galioglu, *Danial Vahabli*, Sercan Hüsnügil, Muhammed H Güneş, "Dynamic evolution of hyperuniformity in a driven dissipative colloidal system" 2021 J. Phys.: Condens. Matter
- *Danial Vahabli*, Tamas Vicsek, "Emergence of synchronized rotations in dense medium with disorder" (In Progress)

Skills

- Advanced In Python
 - Advanced In CUDA library which is a parallel/GPU Computing Library provided by NVIDIA.
 - Advanced In QISKIT.
- Advanced In MATLAB
- Familiar with LabView
- Familiar with NetLogo
- Advanced in Adobe Premiere Pro, Adobe Photoshop, Adobe Audition

Internship

- Summer Intern at Koc University, Istanbul, Turkey under the supervision of Prof. Özgür E. Müstecaplıoğlu (Summer 2020)
 - Joined Lectures on Quantum Simulations for biology, information, and energy systems.
- Member of QTurkey. (September 2019 - June 2020)
 - Organized workshops on Quantum Computing
 - Qmentor on Ted University's Quantum Computing Workshop

Language

- English
 - IELTS: Overall: 8/9, Reading 9, Listening: 8.5, Speaking: 7.5, Writing: 7.5 | Test Date: 21/09/2021
 - The Official language of education is English at my home university. (METU)
- Persian (Native)
- Turkish (Fluent)
 - Living in turkey since 2018.

Awards and Scholarships

- High Honor Student at the Physics Department. (Spring 2018-Spring 2021)
- Ranked 3rd In the Physics Department. (2018-2019)
- 50% Tuition Fee Merit-Based Scholarship (2020-2021)
- 100% Tuition Fee Merit-Based Scholarship (2021-2022)
- Beneficiary of TUTÜBİTAK (Scientific and Technological Research Council of Turkey) Scholarship for my Work With Prof. Serim Ilday.

Teaching and Outreach

- Private tutor for Highschool and college-level mathematics and physics since 2018
- Popular Science Youtube Channel Owner: Danbaft
 - +5.5k Subscribers
 - Persian
 - Covering Popular Physics Subjects
- Popular Science Youtube Channel Owner: Sci-POV (Scientific Point of View)
 - English
 - Covering Applied Mathematics and Complexity Science Subjects

Leadership and Extra Curricular Activities

- Directing Board of METU Physics Society
 - Responsible for METU Physics Society Youtube Channel (+5.5k)
- Directing Board of METU Hip-Hop Society
 - Break-dance Instructor
- Former Member of METU Media Club
 - Photographer
- Content Creator for Anka Theater Group and Dian Art Society