

Irem TOPAL

Physics Engineer | Postdoctoral Researcher

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EDUCATION

- 2023 PhD in Computational Applied Science and Engineering, Kadir Has University, Istanbul, Turkey.
- 2019 PhD in Physics Engineering, Istanbul Technical University, *Courses Transferred*.
- 2017 MSc in Physics Engineering, Istanbul Technical University.
- 2014 BSc in Physics Engineering, Istanbul Technical University.

RESEARCH AND EXPERIENCE

Present June 2023	Postdoctoral Researcher, UNIVERSITY OF PADOVA, Padova, Italy. Department of Biomedical Sciences
May 2023 October 2019	Research Assistant, KADIR HAS UNIVERSITY, Istanbul, Turkey. PhD funded by TUBITAK
Sept 2021 July 2021	Visiting PhD Student, INTERNATIONAL CENTER FOR THEORETICAL PHYSICS, Trieste, Italy. Quantitative Life Sciences Section
October 2019 November 2018	Physics Tutor, BAHCESEHIR, Istanbul, Turkey. Worked one-on-one with undergraduate engineering students to prepare them for the exams in Physics I and II.
October 2019 April 2018	Data Scientist, MILETOS INC., Istanbul, Turkey.

PUBLICATIONS

- 2024 Topal, I. et al., "Machine learning for cerebral blood vessels' malformations", (under review).
- 2023 Topal, I., Eroglu, D., "Reconstructing Network Dynamics of Coupled Discrete Chaotic Units from Data", Physical Review Letters **130**, 117401, (2023).
- 2019 Topal, I., Servantie, J., "Molecular Dynamics Study of the Thermal Conductivity in Nanofluids", Chemical Physics **516**, 147-151, (2019).

TALKS AND POSTERS

- 2024 *Scaling and criticality in brain-wide neural activity of larval zebrafish* (Poster), Italian Network for Computational Neuroscience, Istituto Superiore di Sanità, Roma, Italy.
- 2022 *Reconstructing network dynamics of weakly coupled chaotic units from data* (Talk), Inverse Network Dynamics, Max Planck Institute for the Physics of Complex Systems, Dresden, Germany.
- 2021 *Network Reconstruction from Data* (Poster), The EPS conference on Statistical Physics of Complex Systems, ICTP, Trieste.
- 2021 *Reconstructing Network Dynamics of Weakly Coupled Chaotic Units* (Online), SIAM Conference on Applications of Dynamical Systems.
- 2020 *Sensing Network Dynamics of Weakly Coupled Chaotic Units* (Online), Dynamics Days Digital 2020.
- 2018 *Prediction of DNA Binding Sites for a Transcription Factor* (Poster), Machine Learning Summer School at Bosphorus (BYOYO), Istanbul.
- 2018 *Molecular Dynamics Study of the Thermal Conductivity in Nanofluids* (Talk), The annual Statistical Physics Days, İzmir.

SKILLS

Software VMD, Inkscape, LaTeX, Grace, Gephi

Development tools git

Operating systems Ubuntu, Mac OS X, Windows

PROGRAMMING LANGUAGES

Python ● ● ● ● ●

Fortran ● ● ● ● ○

MATLAB ● ● ● ● ○

LANGUAGES

- > Turkish (Native)
- > English

OUTREACH AND VOLUNTEERING

- 2022 *Caliban and the Witch : Professions Lost by Women* (Podcast), Fiskos Masası, Kadir Has University, Istanbul.
- 2021 *Introduction to Network Sciences* (Online Lecture), 19th Physics Days, Istanbul.
- 2020 *Synchronization of Chaotic Systems* (Online Lecture), 17th Physics Days, Istanbul.
- 2013 İstanbul Technical University, Students' Representative Council, Undergraduate Student Representative of Physics Engineering