Alireza Hashemi

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EDUCATION

The City University of New York (CUNY), Graduate Center,   New York, USA
Physics **PhD Student**   Aug. 2022 – Present
Sharif University of Technology,   Tehran, Iran
Physics **Master of Science**   Sep. 2019 – Jan. 2022
University of Zanjan,   Zanjan, Iran
Physics **Bachelor of Science**   Sep. 2015 – Jun. 2019

WORK EXPERIENCE

blu Bank, *Data Scientist,* Tehran, Iran   May. 2020 – Aug. 2022

- Training and stacking of several CNN architectures for face vs. ID card verification using transfer learning, face liveness detection on streaming video using commands
- Fraud detection on user debit card transactional data using isolation forests, autoencoders, and feature engineering
- Knowledge graph design and building, designed and developed a Neo4j database from several data sources to identify money-laundry networks, community detection, and recommender system.
- Marketing analysis & A/B testing, high level presentations for managers and strategic planning
- Data engineering pipelines and automation DAGs using Apache Airflow and ETL with Python. working with different databases: Oracle, PostgreSQL, MongoDB, MySQL, Clickhouse

Rahnema College, *Machine Learning Course Mentor,* Tehran, Iran   Mar. 2021 – Jun. 2021

- Mentored a small group of interns in machine learning for three months as a part of volunteer work.

Rahnema College, *Machine Learning Intern,* Tehran, Iran   Jan. 2019 – Mar. 2020

- 3-month training program in basics of machine learning. Final project: A recommender system for a music streaming service
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PUBLICATIONS

A. Hashemi, S.Sajjadi, F. Ghanbarnejad, **Social distancing in pedestrian dynamics and its effect of disease spreading**. *Physical Review E* (2021).

A. Hashemi, M. Ejtehadi, **Chaotic dynamics of active topological defects**. *Soft Materials* (2021).

A. Hashemi, A. Darooneh, **Analysis of the ground-state energy eigenvalues of fractal quantum potentials**. *Physica Scripta* (2019).

M. Nikbakht, S. Ahmadian, **A. Hashemi**, **Many-body effects on the radiative heat transfer in fractal nanostructures**. *IJAA* (2017).

Translation of the book "Dark Matter & Dark Energy" by Brian Clegg to Farsi (2020)

CONFERENCES

Social distancing in pedestrian dynamics. *Dynamical Biological Systems* (2020), **COVID-19 in Iran**. *NetSci* (2020)

Effectiveness of social distancing through the lens of ABM. *Complex Systems Society* (2020)

RELEVANT SKILLS

Python: NumPy, Pandas, Scikit-Learn, NetworkX, Keras, TensorFlow, PyTorch, graph-tool, **C++**: LAPACK, Computational Physics, **Matlab**, **R**, **Basic Linux**, **SQL, NoSQL Databases**, **CUDA**, **cuDNN**, **Machine Learning:** Supervised/Unsupervised/Semi-Supervised, **Deep Learning:** Image processing with CNN, Transfer learning, Graph neural networks, Autoencoders, **Timeseries:** Causal impact analysis, timeseries prediction algorithms, **Anomaly Detection**, **Graph Databases:** Neo4j, **Teamwork Tools:** Jira, Git, Confluence, **Data Reporting:** Metabase, Superset, Power BI, **Data Engineering:** Apache Airflow, Python ETL

OTHER

NTD Hackathon runner-up team (covered in NPR.org), TA for 5 courses during B.Sc. and M.Sc. studies, 23rd & 24th school on physics at IASBS, Tehran School on Complex Networks (TACN2018) participant

LINKS

Google Scholar   **Researchgate**   **Linkedin**   **Github**