Hasan Alp Boz, PhD

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EDUCATION

Doctor of Philosophy (PhD) in Computer Science, Sabanci University Istanbul, Turkey
Dissertation: Analyzing Large-Scale Human Mobility Data to Address Societal Issues 2019-2023
Advisor: Prof. Selim Balcisoy

Master's Degree in Computer Science, Sabanci University Istanbul, Turkey
Thesis: A Visual Multivariate Dynamic Egocentric Network Exploration Tool 2017-2019
Advisor: Prof. Selim Balcisoy

Bachelor's Degree in Computer Science, Sabanci University Istanbul, Turkey
Thesis: Determining Negative Keywords for Search Engine Based Advertising Campaigns 2013-2017
Advisor: Assoc. Prof. Kemal Kilic

RESEARCH INTERESTS

Human Mobility: Analyzing patterns of both individual and masses of human mobility to develop data-driven solutions that address societal issues, such as urban planning, amenity accessibility, and healthcare access, with the aim of improving the well-being and resilience of communities.

Human Behavioral Data Science: Applied statistics and deep learning methods to model and understand individual and collective behavior using big data.

RESEARCH EXPERIENCE

Visiting Researcher at MIT Media Lab Cambridge, MA
Massachusetts Institute of Technology Sep 2022 - Mar 2023

- Supervised by Prof. Alex 'Sandy' Pentland in the Human Dynamics group. Research on human mobility analysis with an emphasis on informed decision-making and economic insights.

Research Assistant at BAVLAB Istanbul, Turkey
Sabanci University Sep 2017 - Present

- Advised by Prof. Selim Balcisoy. Research on addressing societal issues with human mobility analyses.

- Developed interactive data exploration tools for complex datasets in master's.

- Led bachelor's and master's degree students in numerous projects.

PUBLICATIONS

♯ Equal Contribution
* Students Mentored

Articles in Peer Reviewed Journals

1. **Hasan Alp Boz**, Mohsen Bahrami, Selim Balcisoy, Burcin Bozkaya, Nina Mazar, Aaron Nichols, Alex Pentland. Investigating Neighborhood Adaptability Using Mobility Networks: A Case Study of the COVID-19 Pandemic. Accepted in *Nature Humanities and Social Sciences Communications*. 11, 397. (2024) Scopus, Impact Factor: 3.5

2. Mohsen Bahrami♯, **Hasan Alp Boz**♯, Yoshihiko Suhara, Selim Balcisoy, Burcin Bozkaya, Alex Pentland. Predicting merchant future performance using privacy-safe network-based features. **Nature Scientific Reports**. 13 (1), 10073. (2023)

3. Ulku Ozturk, **Hasan Alp Boz**, Selim Balcisoy. Visual analytic based ship collision probability modeling for ship navigation safety. **Expert Systems with Applications**. 175, 114755. (2021)

4. Gunce Keziban Orman, Nadir Ture, **Hasan Alp Boz**, Selim Balcisoy. Finding proper time intervals for dynamic network extraction. **Journal of Statistical Mechanics: Theory and Experiment**. (3), 033414. (2021)

Articles in Peer Reviewed Conference Proceedings

1. **Hasan Alp Boz**, Mohsen Bahrami, Selim Balcisoy, Alex Pentland. Footfall Prediction Using Graph Neural Networks. **Signal Processing and Communications Applications Conference (SIU)**. (2023)

2. **Hasan Alp Boz**, Mert Gurkan, Berrin Yanikoglu. Keystroke Dynamics Based Biometric Identification. **Signal Processing and Communications Applications Conference (SIU)**. (2020)

3. **Hasan Alp Boz**, Mohsen Bahrami, Yoshihiko Suhara, Burcin Bozkaya, Selim Balcisoy. An exploratory visual analytics tool for multivariate dynamic networks. **International EuroVis Workshop on Visual Analytics (EuroVA)**. (2020)

4. Atilla Nalcaci*, Dilara Girgin*, Semih Balki*, Fatih Talah*, **Hasan Alp Boz**, Selim Balcisoy. Detection of Confirmation and Distinction Biases in Visual Analytics Systems. **International EuroVis Workshop on Trustworthy Visualization (TrustVis)**. (2019)

Book Chapters

1. Yasin Findik, **Hasan Alp Boz**, Selim Balcisoy. Facilitating Decision-Making with Multimodal Interfaces in Collaborative Analytical Sessions. **Intelligent Scene Modeling and Human-Computer Interaction**. Human–Computer Interaction Series. Springer, Cham. (2021)

Conference Presentations (without proceedings)

1. **Hasan Alp Boz**, Mohsen Bahrami, Massimiliano Luca, Selim Balcisoy, Alex Pentland. Foot Traffic Prediction Using Graph Neural Networks. **International Conference of Computational Social Science (IC2S2)**. Poster Presentation. (2023)

2. **Hasan Alp Boz**, Mohsen Bahrami, Selim Balcisoy, Burcin Bozkaya, Nina Mazar, Aaron Nichols, Alex Pentland. Neighborhood Resilience and Fragility to the COVID-19 Pandemic from a Mobility Network Perspective. **International Conference of Computational Social Science (IC2S2)**. Oral Presentation (2022)

3. Mert Gurkan, **Hasan Alp Boz**, Alfredo Morales and Selim Balcisoy. A Visual Exploratory Tool for Migration Analysis. **International Conference on Computational Science (ICCS)**. Oral Presentation (2020)

4. Mohsen Bahrami, Yoshihiko Suhara, **Hasan Alp Boz**, Selim Balcisoy, Burcin Bozkaya and Alex Pentland. A Merchant Financial Well-being Prediction Using Network Features. **International Conference of Computational Social Science (IC2S2)**. Oral Presentation (2020)

SERVICE

Journal Reviewer: PLOS ONE
Conference Reviewer: International Conference on Cyberworlds (CW) 2023, Computer Graphics International (CGI) 2023, Signal Processing and Communications Applications Conference (SIU) 2022-23

TEACHING

Instructor: Programming Fundamentals, CS201 - Sabanci University   Spring 2024
- A 14-week undergraduate course catering to a cohort of 400 students, focusing on the fundamentals of programming using C++.
- Topics include an introduction to object-oriented programming, recursion, and pointers among others.

Main Instructor: Exploratory Data Analysis & Visualization, DA518 - Sabanci University   Spring 2022/24
- Created and taught a 7-week course on the basics of exploratory data analysis and visualization for professionals working in the industry.
- Developed all course material including programming tutorials, lecture presentations, and hands-on exercises.

Head TA: Introduction to Data Science, CS210 - Sabanci University   6 Semesters
- Created the content of weekly-held problem-solving sessions.
- Managed a team of TAs throughout the semester.

TA: Computational Approaches to Problem Solving, IF100 - Sabanci University   4 Semesters
- Held weekly problem-solving sessions in Python, graded exams, and homework.