Berk Idem

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Professional Experience

Pennsylvania State University **University Park, PA**
Machine Learning Researcher *2022- Present*
- *Processing and extracting features from (8 TBs of) satellite images using CNNs to make air pollution predictions.*
- *Creating and improving models for air pollution predictions by combining structured and unstructured data.*

Pennsylvania State University **University Park, PA**
Graduate Research Assistant *2018- 2022*
- *Assisting academic research on market design, game theory, and sequential auctions.*

Pennsylvania State University **University Park, PA**
Graduate Teaching Assistant *2016- 2021*
- *Teaching Introduction to Economics, Intermediate Microeconomics, and Game Theory classes (∼150 students/year).*
- *Preparing recitation materials; holding recitation sessions and office hours; coordinating and mentoring graders.*

Relevant Skills

Econometrics: Logistic Regression, Causal Inference, Experimental Design, A/B Testing, Synthetic Controls, Reduced-Form Analysis, Panel Data, Time Series
Machine Learning: Random Forests, Gradient Boosting, PCA, SVM, KNN, Deep Learning, Neural Networks, NLP
Programming Skills: Python (NumPy, Pandas, Scikit-Learn, Tensorflow, Keras, Torch, Matplotlib, Seaborn), SQL, Mathematica, Matlab, HTML, CSS
Other Software Skills: Linux, Git, Docker, Gurobi, Latex, WSL, MS Office
Economics: Statistical Modeling, Simulations, Optimization, Operations Research, Market Design
Languages: Turkish (native), English (fluent), Spanish (intermediate), Italian (beginner)

Education

Pennsylvania State University **University Park, PA**
PhD in Economics (Econometrics and Quantitative Economics) *2022*

Bilkent University **Ankara, Turkey**
MA in Economics *2016*

Bilkent University **Ankara, Turkey**
BA in Economics *2014*

Selected Academic Papers

FIELDS: Applied Microeconomics, Industrial Organization, Market Design, Mechanism Design, Game Theory, Auctions
ADVISORS: Prof. Vijay Krishna (chair), Prof. Kalyan Chatterjee, Prof. Nima Haghpanah, Prof. Ran Shorrer

Coexistence of Centralized and Decentralized Markets (Job Market Paper)
- *Computed the profit of a platform without needing the distribution of consumer valuations and made predictions about the market shares of platforms*
- *Utilized both symbolic and numerical computational methods, Mathematica, Python*

Existence of Stable Matchings without Substitutability
- *Studied many-to-one matchings and multi-unit auctions; obtained conditions under which the market is stable*
- *Simulated preferences and computed stable outcomes on high-performance cloud-based computing infrastructure using Python*

Selected Conference and Seminar Presentations

Invited seminars at Koc U., Corvinus U., NYU-AD; Social Choice & Welfare; European Meeting of GT 2022
European Winter Meeting of ES; Midwest ET Conference; Economics and Computation (EC); Story Brook GTC 2021
Conference on Mechanism and Institution Design 2020
PSU Applied Microeconomics Workshop; PSU Economic Theory Workshop 2017-2022