Yagiz Devre

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EDUCATION

Princeton University **Princeton, New Jersey**

Bachelor of Science in Engineering, Full Scholarship, Major in Computer Science, Muhtar Kent Foundation Fellowship. *September 2022 - Present*

- Minors in ***Operations Research & Financial Engineering***, ***Finance, Applied and Computational Math***, ***Statistics and Machine Learning***
- **Extracurricular Organizations:** Prospect Student Ventures (PSV), Tiger Sustainable Investment Group (TSIG), Princeton Turkish Students Association (Secretary General), Princeton Rocketry Club (Airframe Leader), Princeton Society for Physics Students (Treasurer & Tech Chair)
- **Relevant Coursework**: Long Term Memory in ***AI-Vector Search*** and Databases (COS597A Graduate Course), ***Advanced Programming Techniques*** (COS333), ***Functional Programming*** (COS326), Intermediate Microeconomic Theory: Mathematical Approach (ECO310), Algorithms and Data Structures (COS226), High Tech Entrepreneurship (ECE491), Introduction to Machine Learning (COS324), Introduction to Programming Systems (COS217)
- **Certificates:** ***Bloomberg*** Market Concepts Specialization Course, ***Bloomberg*** Environmental Social Governance Specialization Course, ***S&P Capital IQ Pro*** Academy, ***Refinitiv Eikon*** Training Specialization by Refinitiv, ***Refinitiv Workspace*** Training Specialization by Refinitiv

EXPERIENCE

Ernst and Young (EY)

Incoming Forensic Data Science and Business Analysis Winter Intern *December 2023 – January 2024*

- Will collaborate with a multidisciplinary team, of clients, fraud investigators, auditors, and regulatory authorities to conduct data analysis manage the end-to-end lifecycle of engagements within the Forensic Data Analytics encompassing data extraction, transformation, and visualization.

Department of Energy, Princeton Plasma Physics Lab

Molecular Dynamics Researcher at Carter Group *May 2023 - Present*

- Developed a multi-level simulation on quantum mechanics ***and machine-learned atomic interaction potentials*** using ***Python***, ***VASP*** (Vienna Ab initio Simulation Package), and ***VESTA (***Visualization for Electronic Structural Analysis). Constructed the paper *DFT-Based Machine-Learned Reactive Force Fields for Water and Carbon Dioxide-Water* Systems that will be published in ***Journal of Physical Chemistry A*** as primary author

Princeton University Computer Science Department

Undergraduate Teaching Assistant for COS226 Algorithms and Data Structures *January 2023 - June 2023*

- Provided valuable support to **over 50 students** by guiding them through multiple questions and coding exercises on the Ed Lessons platform on algorithms and abstract data structures. Offered office hours for students for assistance with quizzes and assignments to provide tailored support.

Massachusetts Institute of Technology & Kadir Has University

Renormalization Group Researcher and Teaching Assistant at Nihat Berker Group *September 2021 - August 2022*

- Calculated, visualized the phase space and phase diagram for spins under an adapted version of Migdal Kadanoff approximation for q state Potts using ***Python*** and ***Numpy***. Published the article as the primary author in the most esteemed journal, ***American Physics Society Physical Review***.

PROJECTS

Sociokraft | Project Founder and Lead Developer *website: sociokraft.com*

- Founded the company Sociokraft, got funded by Princeton University and Keller Center, used data science to amplify advertising and customer profile segmentation through AI-integrated target customer analysis and influencer marketing, managed a team of 15 people around the globe.
- Developed the mobile application in React Native and MongoDB. Developed and launched the website sociokraft.com using HTML, CSS, and JavaScript. Developed the Sociokraft Dashboard for companies using JS, MongoDB, and Azure AI.

Duet | Project Founder and Lead Developer

- Founded the project Duet for COS597 Graduate Course on AI Vector Databases, used vector database for profile analysis based on music habits.
- Used Pinecone AI vector database API, developed the mobile application in Swift native development and Firebase Database. Utilized Spotify's developer API for user profiling along with OpenAI's vector embedding models for accurate representation of users based on their taste in music.

DeepTrade | Project Founder and Lead Developer

- Initiated the project DeepTrade, used Tensorflow 2.0 with Deep Q-Learning method to make stock trades with proximal policy optimization.
- Trained the model on the Yahoo Finance dataset, used the Alpaca API for the trading, and Keras for the machine learning model for trading.

RESEARCH PUBLICATIONS

- *Devre, H. Y., & Berker, A. N. (2022).* ***First-order to second-order phase transition changeover and latent heats of q-state Potts models in d =2,3 from a simple Migdal-Kadanoff adaptation****. Physical Review E, 105(5). https://doi.org/10.1103/physreve.105.054124*
- *Gaunt, O., Devre, H. Guhathakurta, P. et al. (2022).* ***Triangulum Extended (TREX) Survey: I. An Automated Method for Precise Airglow Subtraction for Keck DEIMOS Multislit Spectra****. American Astronomical Society Meeting 302.01 54(6). Bulletin of the American Astronomical Society.*
- *Sethia, P., Devre, H., Guhathakurta, P. et al. (2022).* ***Triangulum Extended (TREX) Survey: II. Emission Line Diagnostics and Rare Emission Lines Associated with M33's Ionized Gas Disk****. American Astronomical Society Meeting 105.04 54(6). Bulletin of the American Astronomical Society*

HONORS & AWARDS

- ***TRON*** Builder Tour 2022 ***Blockchain*** Hackathon ***Winner*** of $10.000
- **Outstanding Scholar Honors Award** by The Office of Education Attaché of Turkey and Turkish Consulate General
- 1st Place | ***Golden Medalist*** in BUCA IMSEF among ***26 Countries***, ***represented Turkey in 4 conferences*** | invited to ***Sigma-Xi Annual Student Research Conference***
- 2020 ***CERN*** BL4S Worldwide ***Finalist*** Shortlisted Team | Examining gamma beam attenuation properties Mars regolith for radiation shielding.
- 2020 ***IIO*** (Istanbul Informatics Olympiad-Competitive Programming) ***Bronze Medal***

SKILLS

- **Languages:** Turkish (Native), English (Native), German (Fluent) TOEFL IBT(Score: 108/120), IELTS (Score: 8.0/9.0)
- **Programming:** Python, OCaml, PyTorch, R, Java, C, C++, SQL, PHP, MATLAB, Full Stack Development, React Native, ML, Data Analysis
- **Software:** Spotfire, Bloomberg Terminal, Alteryx, Refinitiv Eikon, Refinitiv Workspace, CapitalIQ Pro, KNIME, Microsoft Excel, Microsoft PowerPoint, Microsoft Word, MorningStar Direct, VASP, VESTA, Firebase, MongoDB, Amazon Web Services (AWS), Azure, IBM SPSS, SAS
- **Concepts:** Machine learning, Financial Analysis, Quantitative Analysis, Trading, R&D, Leadership, Stock Market Analysis, Corporate Finance