Ömer Ekmekcioğlu

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Google Scholar

EDUCATION

UNIVERSITY OF WARWICK Coventry, UK
Ph.D. Candidate in WBS Operations Group September 2022 - Ongoing
w/ specialization in Deep Learning for operations and business problems.

BILKENT UNIVERSITY Ankara, TURKEY
Master of Industrial Engineering (CGPA: 3.86/4) September 2019 - June 2022
w/ specialization in Deep Learning in Finance, Robust & Sparse Optimization
Coursework: Deep Learning, Algebraic and Geometric Methods in Data Analysis, Stochastic and Risk-Sensitive Optimization, Probabilistic Analysis, Linear Programming

BILKENT UNIVERSITY Ankara, TURKEY
B.S. in Electrical and Electronics Engineering (CGPA: 3.20/4) September 2015 - June 2019
Coursework: Machine Learning, Statistical Learning and Data Analytics, Random Processes

PUBLICATIONS

GRAPH NEURAL NETWORKS FOR DEEP PORTFOLIO OPTIMIZATION NEURAL COMPUTING AND APPLICATIONS - SPRINGER
Journal Paper July 2023 - Published
• Improving the performance of the state of art financial portfolio construction methods leveraging advancements in the deep learning literature.
• Google Scholar Link • Paper Link

PROVABLY OPTIMAL SPARSE SOLUTIONS TO OVERDETERMINED LINEAR SYSTEMS WITH NON-NEGATIVITY CONSTRAINTS IN A LEAST-SQUARES SENSE BY IMPLICIT ENUMERATION OPTIMIZATION AND ENGINEERING - SPRINGER
Journal Paper Aug 2021 - Published
• Efficient enumeration method for cardinality constrained non-negative least squares solutions
• Python implementation of the algorithm as a library.
• Google Scholar Link • Paper Link

SUBSET BASED ERROR RECOVERY SIGNAL PROCESSING - ELSEVIER
Journal Paper Oct 2021 - Published
• Combining Random Projection theorems along with sparse and robust regression methods to propose a robust data denoising technique and a robust Extreme Learning Machine algorithm.
• Google Scholar Link • Paper Link

FAST AND OPTIMAL SPARSE PCA USING IMPLICIT ENUMERATION EUROPT 2021
Conference Paper Jul 2021 - Presented
• Efficient branch and bound based enumeration method is proposed to solve sparse PCA problems optimally.

RESEARCH EXPERIENCE

DEEP OPTION PRICING Coventry, UK
Ongoing Research Ongoing
• Implementing physics-aware deep learning methods on the solutions of option pricing stochastic partial differential equations.

REINFORCEMENT LEARNING BASED AGE OF INFORMATION MINIMIZATION FOR IOT DEVICES Ankara, TURKEY
Research Assistant Feb 2019 - May 2019
• Q-Learning algorithm implemented from scratch on the solar panel data in order to optimize the communication scheduling of internet of things (IOT) devices.

UMRAM - NATIONAL MRI RESEARCH CENTER Ankara, TURKEY
Research Intern June 2019 - Aug 2019
• Subzone-Based Reconstruction Algorithm implementation for MR Elastography.

EXPERIENCE

UCL SCHOOL OF MANAGEMENT London, UK
Research Assistant Oct 2023 - Ongoing

ATLASUS Ankara, TURKEY
Senior Project Sep 2019 - May 2020
• Real-time mapping using SLAM technique, for ATLAS Unmanned Systems Ltd. (Using computer vision and optimization techniques to add real-time mapping solutions developed for unmanned aircraft systems)

ASELSAN Ankara, TURKEY
Summer Intern Aug 2019 - Sept 2019
• Implemented Advanced Encrypted Messaging System (AES-256) using keyboard and VGA using VHDL

ONUR Ankara, TURKEY
Summer Intern Aug 2017 - Sept 2017
• PCB design, implementation of the components used in a card in Altium Designer.

PROJECTS

ALGORITHMIC TRADING BOT
• Trading Bot developed using Deep RNN architecture for paper trading using Keras/Python and Alpaca API.

GENERATIVE ADVERSARIAL NETWORK COMPOSING CLASSICAL MUSIC
• Generative Adversarial Network architecture used to compose classical music similar to Mozart.

SONG RELEASE DATE PREDICTION/CLASSIFICATION
• Song Release Date Prediction/Classification using timbre values of the music data. Neural Network, SVM and Logistic Regression variants are applied.

ROBUST MATRIX COMPLETION
• Investigation of robustness and error recovery using Matrix Completion methods and Rank Minimization with Nuclear Norm Minimization using CVXPY.

SKILLS

• **Programming Languages:** Python, Matlab, Java, C++, R, VHDL, Assembly for 8051, LaTeX
• **Other Technologies:** TensorFlow, Keras, PyTorch, CVXPY, CVX, GAMS, XPRESS
• **Languages:** Turkish (native), English (fluent) Toefl overall score of 113, French (conversational).

LEADERSHIP AND HONORS

• CS-102 **Best project award** with **Realistic Space Simulation Game** written in Java Feb 2015 - May 2015
• Physics 101 **project award**, **2nd Place** and Physics 102 Best project award, nominee. Sep 2015 - Feb 2015
• **CMAS 3 star** scuba diver /w specialization in deep diving, dive leading and first aid. (Worked in community projects to clean diving sites in Turunç, Marmaris) Sep 2013 - Ongoing
• Amateur Cook (**Certificate** from Chef Academy - Turkey) May 2018 - Aug 2018
• **Invited** to Humanities Honor Seminar for A+ course performance (out of 990 students) May 2017
• **Competitive** gaming especially World of Warcraft (Ranked in the top 5 among 50 Thousand Players, within top 0, 06% worldwide) and Chess.

REFERENCES

• **Mustafa Çelebi Pınar**, Department of Industrial Engineering, Bilkent University, Ankara Turkey. email: mustafap@bilkent.edu.tr
• **Çagın Ararat**, Department of Industrial Engineering, Bilkent University, Ankara Turkey. email: cararat@bilkent.edu.tr
• **Firdevs Ulus**, Department of Industrial Engineering, Bilkent University, Ankara Turkey. email: firdevs@bilkent.edu.tr