KUBILAY ULGER

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Summary: PhD student in Electrical Engineering working on foundations of task-oriented multiterminal compression with an interest in statistics, information theory, data science and wireless communications.

EDUCATION

PhD in Electrical Engineering September 2020 - Present
New York University Tandon School of Engineering Brooklyn, NY
Advisor : Prof. Elza Erkip
Research Interests: Semantic Source Coding, Information Theory, Wireless Communications, Physical Layer Security, Statistics
Relevant Coursework: Information Theory, Wireless Communications, Linear System Approach to Wave Propagation, Detection and Estimation Theory, Mathematical Statistics, Machine Learning, Deep Learning, Digital Signal Processing, Probability and Stochastic Processes, Data Structures and Algorithms, Algorithmic Machine Learning and Data Science.
GPA : 4.00/4.00

B.S. in Electrical & Electronics Engineering September 2014 - June 2020
B.S. in Physics (Double Major)
Bogazici University Istanbul, Turkey
Relevant Coursework: Statistical Signal Processing, Digital Communications, Image Processing
GPA : 3.83/4.00
Ranked **6th out of 2 million** in National University Admission Exam.

RESEARCH & WORK EXPERIENCE

Research Assistant at NYU Wireless Brooklyn, NY
Advisor: Prof. Elza Erkip September 2020 - Present

- One-shot characterization for compression with side information of uniform sources (ISIT 2024).
- Robust Multiterminal Neural Compressors (ISIT 2024, Learn to Compress Workshop).
- Single-shot bounds for a Source Coding problem with multiple objectives. (Allerton 2023).

Bachelor's Thesis, Bogazici University Istanbul, Turkey
Supervisor: Prof. Ali Emre Pusane September 2019 - June 2020

- Studied Physical Layer based spoofing detection schemes.
- Worked on a Channel State Information based Physical Layer Authentication scheme for an autoregressive channel model (TSP 2020).

Research Intern at Max Planck Institute Stuttgart, Germany
Supervisor: Prof. Metin Sitti June 2019 - August 2019

- Design and actuation of MRI-driven small-scale robots towards medical applications
- Performed Experiments on actuation and localization of ferromagnetic micro robots in MRI systems.
- Developed localization algorithm for to detect and track artifacts caused by ferromagnetic particles is MRI images.

PUBLICATIONS AND PREPRINTS

Oguzhan Kubilay Ulger and Elza Erkip. "One-Shot Wyner-Ziv Compression of a Uniform Source" IEEE International Symposium on Information Theory (ISIT) 2024.

Eyyup Tasci, Ezgi Ozyilkan, **Oguzhan Kubilay Ulger**, and Elza Erkip. "Robust Distributed Compression with Learned Heegard–Berger Scheme," IEEE International Symposium on Information Theory Workshops (ISIT-W) 2024.

Oguzhan Kubilay Ulger and Elza Erkip. "Single-Shot Lossy Compression for Joint Inference and Reconstruction", 59th Annual Allerton Conference on Communication, Control, and Computing (Allerton) 2023.

Oguzhan Kubilay Ulger, Mehmet Ozgun Demir, Ozan Alp Topal, Gunes Karabulut Kurt, and Ali Emre Pusane. "Efficient Physical Layer Spoofing Detection with an Autoregressive Model", 43rd International Conference on Telecommunications and Signal Processing (TSP) 2020.

SKILLS

Programming & Software	MATLAB, Python, PyTorch, C++, LaTeX
Analytical	Statistics, Probability Theory, Information Theory, Wireless Communications
Languages	Turkish(Native), English (Fluent)

TEACHING

NYU Tandon Electrical & Computer Engineering
Teaching Assistant

- Introduction to Probability (Fall 2021)
- Information Theory (Spring 2022)

HONORS AND AWARDS

Student Travel Grant, International Symposium on Information Theory	2024
Student Travel Grant, North American School of Information Theory	2022-2023
School of Engineering (SoE) Fellowship, NYU Tandon School of Engineering	2020-2022
Outstanding Success Scholarship, Bogazici University	2014-2020
National University Exam Top 100 Scholarship, Higher Education Institution (Turkish)	2014-2019