MELTEM TATLI

Troy, NY | [name] [last name] 27 [at] [gmail] [dot] [com] | LinkedIn

EDUCATION

Rensselaer Polytechnic Institute, Troy, NY   2023 – Present
Ph.D. in Electrical Engineering | GPA: 4.00/4.00 | Focus: Reinforcement Learning, Risk-Sensitive Bandits

Bilkent University, Ankara, Turkey   2019 – 2023
B.S. in Electrical and Electronics Engineering | GPA: 3.90/4.00

TECHNICAL SKILLS

ML/AI: Reinforcement Learning, Multi-Armed Bandits, Deep Learning, Optimization, Statistical Modeling, Experiment Design
Tools: Python, PyTorch, TensorFlow/Keras, NumPy, Pandas, MATLAB, LaTeX
Methods: CVaR/Risk Functionals, Monte Carlo Tree Search, LSTM, Transformers, PCA, POMDP Planning

PUBLICATIONS

- **M. Tatli**, A. Mukherjee, Prashanth L.A., K. Shanmugam, A. Tajer. "Risk-sensitive bandits: Arm-mixture optimality and regret-efficient algorithms." **AISTATS 2025.**
- **M. Tatli**, A. Tajer. "Preference-centric bandits in wireless communications." **NeurIPS AI4NextG Workshop 2025 (Oral).**
- 2 additional papers: *IEEE Trans. on Information Theory (under review); 1 submitted (2026).*

RESEARCH EXPERIENCE

Graduate Research Assistant — Rensselaer Polytechnic Institute   2023 – Present
- Designed novel bandit algorithms optimizing risk functionals (CVaR, Dual Power, PHT) with provable finite-time regret guarantees; published at AISTATS 2025
- Built reproducible Python/NumPy simulation pipeline benchmarking algorithms across multiple bandit instances and risk measures
- Developed preference-centric bandit methods for 5G rate selection; showed mixture-based scheduling outperforms deterministic strategies

Research Intern — Fraunhofer IIS, Erlangen, Germany   Summer 2022
- Tuned neural network hyperparameters for MPEG-H speech–background separation in a production audio codec
- Implemented FCNN components and multi-domain, multi-resolution loss functions in PyTorch

Undergraduate Researcher — Bilkent University, Ankara, Turkey   2022 – 2023
- Built classification models with PCA-based feature analysis; implemented custom neural networks in Keras

SELECTED PROJECTS

- **Transformer Image Captioning** (PyTorch, 2025): Built encoder-decoder captioning model; BLEU 37 on Multi30K
- **POMDP Planning** (NumPy, 2024): Implemented MCTS, forward search, lookahead with rollouts, and QMDP for robot navigation
- **Energy Optimization Capstone with Arçelik** (TensorFlow, 2023): LSTM + PID controller on microcontroller reduced refrigerator energy consumption

AWARDS & LEADERSHIP

- **Founders Award of Excellence**, RPI 2024 | **Jerry Dziuba Graduate Service Award**, RPI 2024
- **President**, ECSE Graduate Council (2025) | Graduate Senator, RPI Student Senate | Student Mentor, GradGuide