

Yagiz Savas

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EDUCATION

The University of Texas at Austin, TX, USA

2017–2022 (expected)

Ph.D. in Aerospace Engineering

- Advisor: Ufuk Topcu
- Research Area: Manipulative Decision-Making

The University of Texas at Austin, TX, USA

2017–2019

M.S. in Aerospace Engineering

Bogazici University, Istanbul, Turkey

2011–2017

B.S. in Mechanical Engineering

University of Southern Denmark, Odense, Denmark

Fall 2014

Exchange Semester at the Faculty of Engineering

RESEARCH EXPERIENCE

The University of Texas at Austin, TX, USA

Graduate Research Assistant

2017–Current

- Working on the theoretical and computational aspects of manipulative decision-making through novel connections between controls, optimization, information theory, and formal methods

U.S. Army Research Laboratory, MD, USA

Research Intern

Summer 2019

- Worked on wireless communication systems with an emphasis on distributed beamforming techniques

Bogazici University, Istanbul, Turkey

Undergraduate Student Researcher

2016–2017

- Worked on the adaptive controller design of an active ankle-foot orthosis and an active suspension system

TEACHING EXPERIENCE

The University of Texas at Austin, TX, USA

Graduate Teaching Assistant

Fall 2019

- Hold biweekly office and recitation hours for the course ASE 370C- Feedback Control Systems

INDUSTRY EXPERIENCE

Honeywell, Istanbul, Turkey

Summer Intern

Summer 2015

- Worked on the optimization of the number of plates in a mechanical heat interface unit

SOFTWARE SKILLS

- **Proficient:** Python, MATLAB
- **Familiar:** C++

PUBLICATIONS

* indicates equal contribution

Journal Publications

- [1] **Y. Savas**, V. Gupta, and U. Topcu, “On the Complexity of Sequential Incentive Design”, *under review*.
- [2] **Y. Savas**^{*}, M. Hibbard^{*}, B. Wu, T. Tanaka, and U. Topcu, “Entropy Maximization for Partially Observable Markov Decision Processes”, *under review*.
- [3] **Y. Savas**, C. Verginis, M. Hibbard, and U. Topcu, “On Minimizing Total Discounted Cost in MDPs Subject to Reachability Constraints”, *under review*.
- [4] O. Kirtas, **Y. Savas**, M. Bayraker, F. Baskaya, H. Basturk, and E. Samur, “Design, Implementation, and Evaluation of a Backstepping Control Algorithm for an Active Ankle-Foot Orthosis”, *Control Engineering Practice*, vol. 106, 2021.
- [5] **Y. Savas**, M. Ornik, M. Cubuktepe, M. O. Karabag, and U. Topcu, “Entropy Maximization for Markov Decision Processes Under Temporal Logic Constraints”, *IEEE Transactions on Automatic Control*, vol. 65, no. 4, pp. 1552–1567, 2019.

Conference Publications

- [1] **Y. Savas**, A. Hashemi, A. P. Vinod, B. M. Sadler, and U. Topcu, “Physical-Layer Security via Distributed Beamforming in the Presence of Adversaries with Unknown Locations”, in *International Conference on Acoustics, Speech, and Signal Processing*, 2021.
- [2] M. Hibbard^{*}, **Y. Savas**^{*}, Z. Xu, and U. Topcu, “Minimizing the Information Leakage Regarding High-Level Task Specifications”, in *IFAC World Congress*, 2020.
- [3] M. Hibbard, **Y. Savas**, B. Wu, T. Tanaka, and U. Topcu, “Unpredictable Planning Under Partial Observability”, in *IEEE Conference on Decision and Control*, 2019, pp. 2271–2277.
- [4] **Y. Savas**, M. Ahmadi, T. Tanaka, and U. Topcu, “Entropy-Regularized Stochastic Games”, in *IEEE Conference on Decision and Control*, 2019, pp. 5955–5962.
- [5] **Y. Savas**, V. Gupta, M. Ornik, L. J. Ratliff, and U. Topcu, “Incentive Design for Temporal Logic Objectives”, in *IEEE Conference on Decision and Control*, 2019, pp. 2251–2258.
- [6] **Y. Savas**, M. Ornik, M. Cubuktepe, and U. Topcu, “Entropy Maximization for Constrained Markov Decision Processes”, in *Annual Allerton Conference on Communication, Control, and Computing*, 2018, pp. 911–918.
- [7] **Y. Savas** and H. I. Basturk, “Adaptive Backstepping Control Design for Active Suspension Systems Actuated by Four-Way Valve-Piston”, in *American Control Conference*, 2017, pp. 438–443.
- [8] **Y. Savas**, O. Kirtas, H. Basturk, and E. Samur, “A Backstepping Control Design for an Active Ankle-Foot Orthosis”, in *IEEE Conference on Decision and Control*, 2017, pp. 262–267.

SELECTED TALKS

- 1. **Manipulative Decision-Making: Complexity and Algorithms**, AFOSR Center of Excellence in Assured Autonomy in Contested Environments, May, 2021
- 2. **Safe Autonomous Planning While Protecting Critical Information**, Texas Robotics Symposium, December, 2020
- 3. **Reliable and Secure Wireless Communications via Distributed Beamforming**, U.S. Army Research Laboratory, December, 2020
- 4. **Distributed Beamforming in Adversarial Environments**, AFOSR Center of Excellence in Assured Autonomy in Contested Environments, October, 2020
- 5. **Entropy-Regularized Stochastic Games**, IEEE Conference on Decision and Control, December, 2019
- 6. **Incentive Design for Temporal Logic Objectives**, IEEE Conference on Decision and Control, December, 2019
- 7. **Entropy Maximization for Markov Decision Processes**, U.S. Army Research Laboratory, July, 2019
- 8. **Entropy Maximization for Markov Decision Processes**, UIUC, April, 2019