

Yagiz Savas

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SUMMARY	Researcher with expertise in the mathematical analysis and optimal control of dynamical systems. Experience in the development of probabilistic planning algorithms via convex, discrete, and stochastic optimization, the design of high-level task specifications via formal methods, and the synthesis of low-level controllers via feedback and adaptive control theory.	
EDUCATION	Ph.D. in Aerospace Engineering	2017- 2022 (expected)
	The University of Texas at Austin, USA Dissertation: <i>Manipulative decision-making: theory and algorithms</i>	
	M.Sc. in Aerospace Engineering	2017- 2019
	The University of Texas at Austin, USA	
	B.Sc. in Mechanical Engineering	2011- 2017
	Bogazici University, Turkey	
SELECTED RESEARCH PROJECTS	Planning in uncertain, adversarial environments	
	<ul style="list-style-type: none">Developed a convex optimization-based trajectory planning algorithm that enables a mobile robot to carry out a task by minimizing the predictability of its future trajectoriesDesigned an integer programming-based algorithm to generate trajectories that minimize the predictability of a mobile robot's task expressed as a temporal logic formula	
	Sequential incentive design for behavior modification	
	<ul style="list-style-type: none">Developed nonlinear optimization-based algorithms to synthesize incentive sequences that allow a principal to modify the behavior of an agent with unknown motivationsDemonstrated the algorithms on e-commerce and mobility-on-demand applications	
	Adaptive control of active suspension systems	
	<ul style="list-style-type: none">Designed an adaptive control strategy to cancel the effects of unknown road disturbances on the vertical acceleration of a vehicle with unknown dynamics	
LANGUAGES	Proficient: Python, MATLAB Experienced: C++	
WORK EXPERIENCE	U.S. Army Research Laboratory, Adelphi, MD, USA	Summer 2019
	Graduate Student Intern	
	<ul style="list-style-type: none">Developed a discrete optimization-based algorithm to enable the wireless communication of a group of mobile robots with a base station despite their localization errors	
SELECTED PUBLICATIONS (SCHOLAR)	Published: 2 peer-reviewed journal and 7 peer-reviewed conference papers	
	In review: 3 journal and 2 conference papers	
	<ul style="list-style-type: none">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, 2019Y. Savas, V. Gupta, M. Ornik, L. J. Ratliff, and U. Topcu, "Incentive design for temporal logic objectives", Conference on Decision and Control, 2019Y. Savas and H. I. Basturk, "Adaptive backstepping control design for active suspension systems actuated by four-way valve-piston", American Control Conference, 2017	
RELEVANT COURSES	Probability & stochastic processes, convex optimization, verification & synthesis of cyber-physical systems, optimal control theory, information theory, statistical estimation theory, online learning, statistical machine learning, adaptive control, nonlinear dynamics & chaos	