

Iosif Sakos

Research Fellow, Singapore University of Technology and Design (SUTD)

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I work in optimization and game theory and have supported and co-led teaching in core courses at SUTD. My current research focuses on optimization for classical and quantum AI.

Working Experience

2024 – Present **Research Fellow I**, SUTD, Engineering Systems and Design (ESD) Singapore

Selected Publications

QTML 2025 (Poster) **Certifying Optimality of VQA Solutions via Sparse SOS Hierarchies**
with Georgios Korpas, Wayne Lin, and Antonios Varvitsiotis

NeurIPS 2025 **Certifying Concavity and Monotonicity in Games via Sum-of-Squares Hierarchies**
with Vincent Leon, Ryann Sim, and Antonios Varvitsiotis

L4DC 2025 **Learning and Steering Game Dynamics Towards Desirable Outcomes**
with Ilayda Canyakmaz, Wayne Lin, Antonios Varvitsiotis, and Georgios Piliouras

WINE 2024 **Data-Scarce Identification of Game Dynamics via Sum-of-Squares Optimization**
with Antonios Varvitsiotis and Georgios Piliouras

ICLR 2024 **Beating Price of Anarchy and Gradient Descent without Regret in Potential Games**
with Stefanos Leonardos, Stelios Andrew Stavroulakis, William Overman, Ioannis Panageas, and Georgios Piliouras

NeurIPS 2023 **Exploiting Hidden Structures in Non-Convex Games for Convergence to Nash Equilibrium**
with Emmanouil-Vasileios Vlatakis-Gkaragkounis, Panayotis Mertikopoulos, and Georgios Piliouras

ACM TEAC 2023 **Catastrophe by Design in Population Games: A Mechanism to Destabilize Inefficient Locked-in Technologies**
with Stefanos Leonardos, Georgios Piliouras, and Costas Courcoubetis

Teaching Experience

2026 – Present **Teaching Fellow, 40.002 Optimization** at SUTD Singapore

- Updating the course; teaching a cohort of approximately 40 students.

2025	Teaching Fellow, 40.616 Special Topics in Games, Learning, and Optimization at SUTD <ul style="list-style-type: none"> Designed and taught the “Advanced Topics in Game Theory” part. Course material available at https://learning-in-games.github.io/ Co-Facilitator, 42.520 Optimization for Data Science at SUTD <ul style="list-style-type: none"> Designed/Led Python labs; developed exercises. 	
2024	Teaching Assistant, 40.316 Game Theory at SUTD	
2021	Teaching Assistant, 40.319 Statistical and Machine Learning at SUTD	
2020	Teaching Assistant, 40.011 Data and Business Analytics at SUTD	
2019	Teaching Assistant, 3672 Computer Networks in Athens University of Economics and Business	<i>Greece</i>

Education

2019 – 2024	Ph.D. Engineering Systems and Design <ul style="list-style-type: none"> School: Singapore University of Technology and Design, Engineering Systems and Design Thesis Title: Toward Different Perspectives on the Equilibrium Selection Problem Supervisors: Georgios Piliouras, Antonios Varvitsiotis, Costas Courcoubetis 	<i>Singapore</i>
2018 – 2019	M.Sc. in Computer Science <ul style="list-style-type: none"> School: Athens University of Economics and Business GPA: 9.0/10.0 	<i>Greece</i>
2010 – 2018	B.S. in Computer Science <ul style="list-style-type: none"> School: Athens University of Economics and Business Pillars: IT Systems & Computer Networking, IT Systems & Security Dissertation: Using graph models to automatically restructure IT systems for risk mitigation GPA: 8.01/10.0 	

Skills

Languages	English, Greek (native)
Programming (Current)	Julia, MATLAB, Python
Programming (Prior)	Lua, VB.Net, JavaScript, Java, C/C++, Pascal, Assembly