Yu-Guan Hsieh

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RESEARCH INTEREST

● Online learning ● Distributed optimization ● Learning in games ● Generative models ● PEFT

EDUCATION

2019 – 2023	**Université Grenoble Alpes, Grenoble, France**
	Ph.D. in optimization and machine learning
	Thesis: Decision-Making in Multi-Agent Systems
	<u>Advisors:</u> Franck Iutzeler, Jérôme Malick, and Panayotis Mertikopoulos
2018 – 2019	**École normale supérieure Paris-Saclay, Cachan, France**
	MSc degree in Mathematics, Computer Vision, Machine Learning (MVA)
	Grade: 18.05/20 (Success with Highest Honors)
2016 – 2020	**École normale supérieure, Paris, France**
	BSc degree and MSc in computer science. Grades: 17.22/20 and 17.6/20.
	ENS graduate degree as *normalien*
2014 – 2016	**Lycée du Parc, Lyon, France**
	Intensive preparatory program leading to entrance exams to French Grandes Écoles

INDUSTRIAL AND ACADEMIC INTERNSHIPS

2022 Aug. – 22 Nov. Amazon Web Services, Santa Clara, USA

Applied science internship—Diffusion Prior for Multi-Armed Bandits

Supervised by Shiva Kasiviswanathan

This internship explores the intriguing problem of how deep generative model can help decision making. I propose here to use it to learn a prior as inductive bias in a meta-learning for bandits setup. (Published at ICML 2023)

2021 Oct. – 22 Jan. Amazon Web Services, Tübingen, Germany

Applied science internship—Multi-Armed Bandits and Causality

Supervised by Shiva Kasiviswanathan

The focus of this internship is on the interplay between multi-armed bandits and causality, with the general goal of understanding how causal knowledge can help improve bandit algorithms. I showed via a specific model that this is possible when the arms influence the reward through sparse intermediate variables. (Published at NeurIPS 2022)

2019 Apr. – Sept. Jean Kuntzmann Laboratory (UMR 5224 CNRS), Grenoble, France

Research internship—Extragradient and its variants

Supervised by Franck Iutzeler, Jérôme Malick, and Panayotis Mertikopoulos

In this internship I derived convergence guarantees for extragradient-type methods in solving variational inequalities, with a focus on stochastic setting. (Published at NeurIPS 2019)

2018 Mar. – Aug. RIKEN Center for Advanced Intelligence Project, Tokyo, Japan.

Research internship—Weakly supervised learning

Supervised by Gang Niu and Masashi Sugiyama

During this internship I worked on semi-supervised learning, learning with noisy labels and positive-unlabeled learning. I particularly designed an algorithm for a setup where we have access to positive, unlabeled, and biased negative data. (Published at ICML 2019)

Publications

Preprints

- Shin-Ying Yeh, Yu-Guan Hsieh, Zhidong Gao, Bernard B W Yang, Giyeong Oh, and Yanmin Gong. *Navigating Text-To-Image Customization: From LyCORIS Fine-Tuning to Model Evaluation.* arXiv preprint arXiv:2309.14859, 2023.

Conferences

- Yu-Guan Hsieh, Shiva Kasiviswanathan, Branislav Kveton, and Patrick Bloebaum. *Thompson Sampling with Diffusion Generative Prior.* In **International Conference on Machine Learning (ICML)**, 2023.

- Yu-Guan Hsieh, Kimon Antonakopoulos, Volkan Cevher, and Panayotis Mertikopoulos. *No-Regret Learning in Games with Noisy Feedback: Faster Rates and Adaptivity via Learning Rate Separation.* In **Conference on Neural Information Processing Systems (NeurIPS)**, 2022.

- Yu-Guan Hsieh, Shiva Kasiviswanathan, and Branislav Kveton. *Upliting Bandits.* In **Conference on Neural Information Processing Systems (NeurIPS)**, 2022.

- Yu-Guan Hsieh, Franck Iutzeler, Jérôme Malick, and Panayotis Mertikopoulos. *Optimization in Open Networks via Dual Averaging.* In **IEEE Conference on Decision and Control (CDC)**, 2021.

- Yu-Guan Hsieh, Kimon Antonakopoulos, and Panayotis Mertikopoulos. *Adaptive Learning in Continuous Games: Optimal Regret Bounds and Convergence to Nash Equilibrium.* In **Conference on Learning Theory (COLT)**, 2021.

- Yu-Guan Hsieh, Franck Iutzeler, Jérôme Malick, and Panayotis Mertikopoulos. *Explore Aggressively, Update Conservatively: Stochastic Extragradient Methods with Variable Stepsize Scaling.* In **Conference on Neural Information Processing Systems (NeurIPS)**, 2020.

- Yu-Guan Hsieh, Franck Iutzeler, Jérôme Malick, and Panayotis Mertikopoulos. *On the Convergence of Single-Call Stochastic Extra-Gradient Methods.* In **Conference on Neural Information Processing Systems (NeurIPS)**, 2019.

- Yu-Guan Hsieh, Gang Niu, and Masashi Sugiyama. *Classification from Positive, Unlabeled and Biased Negative Data.* In **International Conference on Machine Learning (ICML)**, 2019.

Journals

- Yu-Guan Hsieh, Yassine Laguel, Franck Iutzeler, and Jérôme Malick. *Push–Pull with Device Sampling.* **IEEE Transactions on Automatic Control (TAC)**, 2023.

- Yu-Guan Hsieh, Franck Iutzeler, Jérôme Malick, and Panayotis Mertikopoulos. *Multi-agent Online Optimization with Delays: Asynchronicity, Adaptivity, and Optimism.* **Journal of Machine Learning Research (JMLR)**, 2022.

Selected Talks

- Making Optimistic Gradient Adaptive and Robust to Noise. In Workshop on Learning in games at National University of Singapore, April 2023.
- Uplifting Bandits. In ECML/PKDD'22 Uplift Modeling Workshop, at Grenoble / online, September 2022.
- Anticipating the Future for Better Performance: Optimistic Gradient Methods for Learning in Games. At National Taiwan Normal University, July 2022.

Service, Distinction, and Awards

- Reviewer at ICML (2020–), NeurIPS (2019–), ICLR (2021–), Operations Research, IEEE-TAC, and JMLR
- Spotlight at NeurIPS 2020
- Silver medal in International Mathematical Olympiad 2013