

Georgios METHENITIS

PhD | Data & Applied Scientist

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Highlights _

- Developed **dynamic pricing models** for ride-hailing (two-sided) markets [FREENOW]
- Designed mechanisms, e.g., second-price **auctions**, for markets with demand/supply uncertainty [PhD]
- Experience in **end-to-end machine learning model life-cycle** [Sennder, FREENOW, ML Programs]

Work Experience

- Experience in **reinforcement learning** and **multi-armed contextual bandits** for decision-making
- Experience in **game-theoretical** analyses of agent interactions and **agent-based simulation** [PhD]
- Most notable research publications in AAMAS, IJCAI, GECCO [PhD, MSc]

Feb. 2023 ~ Current	Sennder - Senior Data Scientist (pricing)
	 Led the development of a new data pipeline and regression model to predict shipment costs, significantly improving key business metrics Served as technical DRI in cross-functional team, contributed to knowledge-sharing sessions, developed team processes, mentoring junior team members, and interviewing Productionized machine learning models by leveraging state-of-the-art MLOps tools
Sep. 2021 ~ Jan. 2023	FREENOW ¹ - Data Scientist (pricing)
	 Led research, analysis, prototyping, and communication to external stakeholders of dynamic pricing models to improve key business metrics Collaborated with multiple stakeholders to define model vision using incremental proof-of-concepts that were based on fundamental market dynamics, e.g., passenger/driver price elasticity Owned several A/B (switchback) experiments, driving a 14% revenue increase with no drop in bookings for a key market segment, while replacing complex, ineffective models and manual pricing rules with simpler, more effective solutions
Oct. 2019 ~ Aug. 2021	ML Programs (Open GI Group) - Senior Data Scientist
	 Led the development of the company's first machine learning model for an insurance client (predicting claims) resulting in improving their loss ratio by 4% generating more than £1 million in cost savings on claims (news) Developed regression models for predicting competitive prices for an online insurance aggregator
Jun. 2014 ~ Sep. 2014	European Space Agency - Advanced Concepts Team - INTERNSHIP
	 Worked on the research project "Novelty Search for Soft Robotic Space Exploration" Applied a novel genetic algorithm (novelty search) for optimizing the morphology and gaits of soft-robots in simulated environment and varying gravity levels (video)
Jan. 2013 ~ Mar. 2014	Dutch Nao Team (Robotic-soccer team) - LEAD PROGRAMMER
	 Enhanced the team's C++ codebase, for the Aldebaran NAO robot and the Standard Platform League, focusing on localization, team strategy, and player behavior Achieved top-16 and 3rd place finishes in international Robocup competitions
Oct. 2013 ~ Feb. 2014	VicarVision (Computer vision company), INTERNSHIP
	 Developed simple algorithm using C# and OpenCV to estimate the floor plane, boundaries and relative position from a single monocular camera based on human detection samples

Oct. 2013 \sim **University of Amsterdam** - TEACHING ASSISTANT Feb. 2014

• Assisted in C++ programming language course

Education _____

Feb. 2015 ~ Aug. 2019	PhD Artificial Intelligence - Delft University of Technology & CWI ²
	 Main focus on the analysis of the behavior of self-interested agents within multi-agent systems using tools from game theory, and the design of pricing mechanisms in settings with uncertainty in supply and/or demand Courses on deep learning (MSc course at the University of Amsterdam), European agent systems summer school, algorithmic game theory, non-cooperative games, stochastic optimization, and several doctoral education workshops PhD Thesis: Agent Interactions & Mechanisms in Markets with Uncertainties: Electricity Markets in Renewable Energy Systems, supervised by: Prof. Han La Poutré (CWI & TU Delft) and Dr. Michael
	Kaisers (Researcher, CWI)
Sep. 2012 ~ Dec. 2014	 MSc Artificial Intelligence - UNIVERSITY OF AMSTERDAM Courses on machine learning, neural networks, autonomous agents (reinforcement learning, multi-agent learning), natural language processing, computer vision, and information retrieval Thesis project on the Evolution of Soft-Robots by Novelty Search, in collaboration with the Advanced Concepts Team in the European Space Agency (ESA), supervised by: Daniel Hennes (ESA), Dario Izzo (ESA) and Arnoud Visser (UvA), grade: 9/10
Sep. 2006 ~ Aug. 2012	Diploma in Electronic and Computer Engineering - TECHNICAL UNIVERSITY OF CRETE
	 Courses on programming, algorithmic complexity, mathematics, probability theory, computer vision, signal processing, artificial intelligence, theory of computation, operating systems, and databases Thesis project on Player Behavior and Team Strategy for the RoboCup 3D Simulation League, supervised by: Prof. Michael G. Lagoudakis. I developed all the necessary software modules (in Java) for robot localization, locomotion, communication, team strategy, and coordination, grade: 10/10

Publications ...

- 1. Georgios Methenitis, Michael Kaisers, and Han La Poutré. Forecast-Based Mechanisms for Demand Response. In: Proceedings of the 18th International Conference on Autonomous Agents and MultiAgent Systems. AAMAS '19. Montreal QC, Canada: IFAAMAS, 2019
- 2. Georgios Methenitis, Michael Kaisers, and Han La Poutré. **Degrees of Rationality in Agent-Based Retail Markets**. In: *Computational Economics* (2019)
- 3. Georgios Methenitis, Michael Kaisers, and Han La Poutré. Renewable Electricity Trading through SLAs. In: Energy Informatics 1.1 (2018)
- Georgios Methenitis, Michael Kaisers, and Han La Poutré. SLA-Mechanisms for Electricity Trading Under Volatile Supply and Varying Criticality of Demand. In: Proceedings of the 16th Conference on Autonomous Agents and MultiAgent Systems. AAMAS '17. Sao Paulo, Brazil: IFAAMAS, 2017
- 5. Georgios Methenitis, Michael Kaisers, and Han La Poutré. Incentivizing Intelligent Customer Behavior in Smart-Grids: A Risk-Sharing Tariff & Optimal Strategies. In: Proceedings of the 25th International Joint Conference on Artificial Intelligence, IJCAI. AAAI Press. 2016
- 6. Georgios Methenitis, Michael Kaisers, and Han La Poutre. A Multi-Scale Energy Demand Model suggests sharing Market Risks with Intelligent Energy Cooperatives. In: Smart Grid Technologies - Asia (ISGT ASIA). IEEE. 2015
- 7. Georgios Methenitis, Daniel Hennes, Dario Izzo, and Arnoud Visser. **Novelty Search for Soft Robotic Space Exploration**. In: *Proceedings of the 2015 Annual Conference on Genetic and Evolutionary Computation*. GECCO '15. Madrid, Spain: ACM, 2015