Georgios METHENITIS

Curriculum Vitæ

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]
- Experience in **reinforcement learning** and **multi-armed contextual bandits** for decision-making [Sennder, MSc]
- Experience in **game-theoretical** analyses of agent interactions and **agent-based simulation** [PhD]
- Most notable research publications in **AAMAS**, **IJCAI**, **GECCO** [PhD, MSc], **PC member** AAMAS ('21, '22, '26)

Work Experience

Feb. 2023 ~ Current

Sennder - Senior Data Scientist (pricing)

- *Led development of machine learning model and data pipelines to predict shipment costs, improving key business metrics and strengthening company-wide trust*
- *Designed and analyzed multiple experiments under B2B constraints using quasi-experimentation and variance reduction techniques, also supported cross-team experimentation*
- *Designed and productionized real-time pricing system using modern MLOps tools (Python, Flyte, BentoML, K8s, Kafka, W&B, MLflow)*

Sep. 2021 ~ Jan. 2023

FREENOW [1] - Data Scientist (pricing)

- *Led research, prototyping, and external communication of dynamic pricing models, improving key business metrics*
- *Partnered with stakeholders to define model vision through incremental proof-of-concepts grounded in market dynamics (e.g., passenger/driver price elasticity)*
- *Owned several A/B (switchback) experiments, delivering a 14% revenue growth with no drop in bookings in 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 gradient boosted (LightGBM) and deep learning (PyTorch) regression models to predict 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*

[1] FREENOW's LatAm business operated under the brand name BEAT

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 ~ Feb. 2014 **University of Amsterdam** - Teaching Assistant

- *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)
4. 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

[2] CWI (Centrum Wiskunde & Informatica) is the national research institute for mathematics and computer science in the Netherlands.