Georgios Methenitis

Curriculum Vitæ

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Barcelona, Spain

Interests

- Complex two-sided markets (e.g., ride-hailing)
- Pricing mechanisms (e.g., auctions) in settings with supply and/or demand uncertainty
- Machine learning applications in e-commerce and financial markets
- Emergent market behavior via agent-based simulation
- Game theoretical analysis of pricing strategies in competitive markets
- Evolutionary algorithms for optimization

Work Experience

Feb. 2023 ~ Current

Sennder - Senior Machine Learning Engineer (pricing)

- *Ideation and prototyping of machine learning algorithms for cost prediction in the logistics domain*
- *Productionization of machine learning models*

Sep. 2021 ~ Jan. 2023

FREENOW (LatAm business operated under the brand **BEAT**) - Data Scientist (pricing)

- *Research, prototyping, productionization of dynamic pricing machine learning algorithms to match demand and supply in two-sided ride-hailing markets w/o finite supply*
- *Designed and analyzed multiple A/B (switchback) experiments for statistical hypothesis testing*
- *Transformed raw event-data into meaningful metrics to be used for both data analytics and as features in machine learning models*
- *Performed multiple (spatio-temporal) data analyses for different pricing components, portfolio management and demand cannibalization*
- *Communicated data insights and product vision to multiple stakeholders and local operation teams*

Oct. 2019 ~ Aug. 2021

ML Programs (Open GI Group) - Senior Data Scientist

- *Worked on regression models of competitive price prediction in online insurance aggregators, and rare event classification (insurance claims)*
- *Designed and developed the overall data pipeline from raw data validation to model evaluation*
- *Led the development of the company's first deployed ML service for an insurance client*

Jun. 2014 ~ Sep. 2014

European Space Agency - Internship

- *Worked in the Advanced Concepts Team on the project "Novelty Search for Soft Robotic Space Exploration"*
- *Applied novel evolutionary search methods (novelty search) for optimizing the morphology and gaits of soft-robots in varying gravity levels (video)*

Jan. 2013 ~ Mar. 2014

Dutch Nao Team (Robotic-soccer team) - Lead Programmer

- *Developed existed C++ codebase for the* Aldebaran NAO *robot and the Standard Platform League, focusing on robot localization, team strategy and player behavior*
- *Participated (placed in top-16 and 3rd) in international and open* Robocup Standard Platform League *competitions*

Oct. 2013 ~ Feb. 2014

University of Amsterdam - Teaching Assistant

- *Assisted in teaching the course* C++ programming language

Oct. 2013 ~ Feb. 2014

VicarVision (Computer vision company), Internship

- *Designed and developed an algorithm (in C# using OpenCV library) for estimating floor plane from monocular camera footage based on human detection samples*
- *The resulted algorithm was able to determine the floor boundaries and the relative position of the floor plane in the three-dimensional space with regards to the camera placement*

Education

Feb. 2015 ~ Aug. 2019

PhD Artificial Intelligence - Delft University of Technology & CWI [1]

- *Research on the application of AI methods in energy systems. Supervised by: Prof. Han La Poutré (CWI & TU Delft) and Dr. Michael Kaisers (Researcher, CWI).*
- *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, entrepreneurship in mathematics and computer science, and several doctoral-level education workshops*
- ***PhD Thesis**: Agent Interactions & Mechanisms in Markets with Uncertainties: Electricity Markets in Renewable Energy Systems*

Sep. 2012 ~ Dec. 2014

MSc Artificial Intelligence - University of Amsterdam

- *Courses on machine learning (pattern recognition), 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 software programming, algorithms and 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, biped locomotion, communication, team strategy, and coordination, grade: **10**/10*

Research 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

Technical Skills

Programming languages

Python (PyTorch, scikit-learn, LightGBM), **SQL**, **C/C++** (Boost, OpenCV, Qt, CMake)

Dev. tools / IDEs / OS

Bash, Vim, **Git**, **Jupyter**, Argo, Conda, Docker, Harbor / PyCharm, Qt Creator / **GNU/Linux** (Arch, Debian), **MacOS**

Robot platforms

Experience with robotic simulators and platforms, such as Webots, Spark, **Aldebaran NAO**, Sony AIBO

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