



# Georgios METHENITIS

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Curriculum Vitæ

## Work Experience

- Oct. 2019 ~  
Current
- MLP (Open GI Group), DATA SCIENTIST**
- o Focusing on machine learning applications for the UK insurance market to optimize brokers' decision-making.
  - o Working on various regression and classification tasks using deep-learning (PyTorch, TensorFlow), linear regression, gradient boosting (XGBoost, LightGBM), and building/maintaining the overall software pipeline from data validation to model evaluation.
- Jun. 2014 ~  
Sep. 2014
- European Space Agency, INTERNSHIP**
- o Worked in the Advanced Concepts Team on the project "Novelty Search for Soft Robotic Space Exploration".
  - o 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**
- o Developed existed C++ codebase for the Aldebaran NAO robot and the Standard Platform League, focusing on robot localization, team strategy and player behavior.
  - o 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**
- o Assisted in teaching the course C++ programming language.
- Oct. 2013 ~  
Feb. 2014
- VicarVision (Computer vision company), INTERNSHIP**
- o Designed and developed an algorithm (in C# using OpenCV libraries) for estimating floor plane from monocular camera footage based on human detection samples.
  - o 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<sup>1</sup>**
- o Research on artificial intelligence methods in energy systems focusing on multi-agent systems, game theory and mechanism design, supervised by: Prof. Han La Poutré (CWI & TU Delft) and Dr. Michael Kaisers (Researcher, CWI).
  - o 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.
  - o Expected graduation ceremony on July 15th 2020.
- Sep. 2012 ~  
Dec. 2014
- MSc Artificial Intelligence - UNIVERSITY OF AMSTERDAM**
- o Courses on machine learning (pattern recognition), neural networks, autonomous agents (reinforcement learning, multi-agent learning), natural language processing, computer vision, and information retrieval.
  - o 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<sup>2</sup> - TECHNICAL UNIVERSITY OF CRETE**
- o Courses on software programming, algorithms and complexity, mathematics, probability theory, computer vision, signal processing, artificial intelligence, theory of computation, operating systems, and databases.
  - o 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

<sup>1</sup> CWI (Centrum Wiskunde & Informatica) is the national research institute for mathematics and computer science in the Netherlands.

<sup>2</sup> 5-year diploma: comparable with attending both BSc and MSc programmes (EQF 7).

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

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### PROGRAMMING (LIBRARIES)

**Python** (PyTorch, TensorFlow, XGBoost, LightGBM, CatBoost, NumPy, scikit-learn, pandas, seaborn), **C/C++** (Boost, OpenCV, Qt, CMake), **Java**, C#, Matlab, HTML/CSS

### DEV. TOOLS / IDEs / OS

**Git**, **Jupyter notebook**, **Bash** / **Vim**, Spacemacs, **LaTeX**, PyCharm, Qt Creator / **GNU/Linux** (Arch, Debian), MS Windows, MacOS

### ROBOT PLATFORMS

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

## Interests

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- Machine learning and reinforcement learning for autonomous system applications (decision support systems)
- Multi-agent system applications in both competitive and cooperative settings
- Game theoretical analysis and mechanism design for retail pricing mechanisms and auctions
- Evolutionary algorithms (fitness-based or behavior-based, e.g., novelty search) for hyper-parameter or fitness optimization