

Georgii Melidi

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Professional Summary

PhD graduate in Computer Science from Sorbonne Université (CNRS–LIP6) with expertise in optimization, machine learning, and decision analytics. Experienced in developing robust and learning-augmented algorithms, analyzing complex datasets, and delivering performance-driven solutions using Python and C++. Passionate about translating theoretical insights into applied, data-based decision systems.

Core Skills

Programming: Python, R, C++, LaTeX
Libraries & Tools: NumPy, Pandas, Scikit-learn, Matplotlib, Git
Techniques: Optimization, Online Algorithms, Robust Decision-Making, Predictive Modeling, Statistical Analysis, Data Visualization

Experience

- **Sorbonne Université – CNRS LIP6** Paris, France
Research Engineer / PhD Researcher Oct 2022 – Sept 2025
 - Designed algorithms for data-driven optimization and decision-making under uncertainty, integrating machine learning predictions with theoretical models.
 - Collaborated in the national ANR project Algorithms with Predictions, focused on ML-assisted analysis.
 - Published peer-reviewed papers, including at AAAI 2025, one of the top AI conferences.
 - Served as reviewer for AAAI 2026 (Program Committee Member).
- **Center of Financial Technologies (CFT)** Novosibirsk, Russia
Intern – Junior Back-End Developer Summer 2019
 - Built and optimized NLP-based modules to classify and analyze banking transactions.
 - Improved data ingestion and feature extraction pipelines for financial datasets using Python.

Selected Projects

- **Scenario-Based Robust Optimization of Tree Structures:** Developed algorithms balancing robustness and efficiency; achieved state-of-the-art performance in theoretical and simulated settings. Published at AAAI 2025.
- **Decision-Theoretic Algorithms with Predictions:** Developed evaluation framework for ML-assisted algorithms integrating regret, competitive analysis, and risk metrics.
- **Gas Transport Optimization:** Developed metaheuristic optimization algorithms to maximize profit and operational efficiency in gas field networks during an industrial collaboration.

Education

- **Sorbonne Université – LIP6 (Laboratoire d'Informatique de Paris 6)** Paris, France
PhD in Computer Science – Operations Research Team Oct 2022 – Sept 2025
 - **Thesis:** *Algorithms Under Uncertainty: Robust Methods and Decision-Theoretic Evaluation*
 - **Supervisors:** Spyros Angelopoulos, Christoph Dürr
- **Novosibirsk State University** Novosibirsk, Russia
BSc & MSc in Applied Mathematics and Informatics Sept 2016 – July 2022
 - **Master's thesis:** Approximation Algorithms for the Histogram Strip Packing Problem
 - **Bachelor's thesis:** Optimal Resource Allocation Across Projects

Selected Publications

- Angelopoulos S., Dürr C., Melidi G. (2026). *Decision-Theoretic Approaches in Learning-Augmented Algorithms*. International Conference on Learning Representations (ICLR 2026). doi: 10.48550/arXiv.2501.17701
- Angelopoulos S., Dürr C., Melidi G. (2025). *Scenario-Based Robust Optimization of Tree Structures*. AAAI Conference on Artificial Intelligence (AAAI 2025). doi: 10.1609/aaai.v39i25.34894
- Erzin A., Kononov A., Melidi G., Nazarenko S. (2023). *A $4/3$ OPT+ $2/3$ Approximation for Big Two-Bar Charts Packing*. *Journal of Mathematical Sciences*. doi: 10.1007/s10958-023-06319-y

Personal Qualities and Interests

Goal-oriented, analytical, and collaborative, with strong communication skills developed through research, writing, and oral presentations. Interested in science communication, technology, and real-world applications of optimization and AI. Outside work, I stay active through CrossFit, swimming, cycling, and running.