

Konstantinos Kaparis, Dr.

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Employment History

- 2016 – **Assistant Professor in Quantitative Methods & Operational Research.**
Department of Business Administration, University of Macedonia, Greece.
- 2018 – 2020 **Visiting Lecturer in Quantitative Methods & Operational Research.**
International Hellenic University, Greece.
- 2015 – 2019 **Visiting Lecturer in Quantitative Methods & Operational Research.**
Department of Management Science, Management School, Lancaster University, UK.
- 2015 – 2016 **Lecturer in Quantitative Methods & Operational Research.**
Department of Business Administration, University of Macedonia, Greece.
- 2013 – 2015 **Lecturer in Quantitative Methods & Operational Research.**
Department of Management Science, Management School, Lancaster University, UK.
- 2011 – 2013 **Senior Research Associate.**
Department of Management Science, Management School, Lancaster University, UK.
- 2007 – 2011 **Lecturer in Operational Research & Management Science.**
School of Mathematics, University of Southampton.


Education

- 2004 – 2008 **Ph.D. Operational Research & Management Science.**
Department of Management Science, Management School, Lancaster University.
Thesis title: *Knapsack Problems: Inequalities, Separation and Heuristics*'.
- 2003 – 2004 **M.Sc. Operational Research**
Department of Management Science, Management School, Lancaster University.
- 1998 – 2003 **B.Sc. Business Administration**
Department of Business Administration, University of Macedonia, Greece.


Research Publications

Journal Articles

- 1 M. Aidinidou, K. Kaparis, and A. Georgiou, "Analysis, prioritization and strategic planning of flood mitigation projects based on sustainability dimensions and a spatial/value ahp-gis system," *Expert Systems with Applications*, vol. 211:118566, 2023.
- 2 K. Kaparis, I. Mourtos, and A. Letchford, "On cut polytopes and graph minors," *Discrete Optimization*, vol. 50, 2023.
- 3 F. Fomeni, K. Kaparis, and A. Letchford, "A cut and branch algorithm for the quadratic knapsack problem," *Discrete Optimization*, vol. 44(2):100579, 2022.
- 4 K. Kaparis, I. Mourtos, and A. Letchford, "Generalised 2-circulant inequalities for the max-cut problem," *Operations Research Letters*, vol. 50(2), pp. 122–128, 2022.
- 5 K. Kaparis, I. Mourtos, and A. Letchford, "On matroid parity and matching polytopes," *Discrete Applied Mathematics*, vol. 284, pp. 322–331, 2020.
- 6 K. Kaparis, I. Mourtos, and A. Letchford, "A note on the circulant inequalities for the max-cut problem," *Operations Research Letters*, vol. 46(4), pp. 443–447, 2018.

- 7 V. Aletras, A. Georgiou, K. Kaparis, *et al.*, “Investigating performance indicators and service quality improvement in an outpatient cardiology department,” *Value in Health*, vol. 19, A663, Nov. 2016.  DOI: 10.1016/j.jval.2016.09.1820.
- 8 F. Fomeni, K. Kaparis, and A. Letchford, “Cutting planes for first-level rlt relaxations of mixed 0-1 programs,” *Mathematical Programming*, vol. 151(2), pp. 639–658, 2015.
- 9 M. Downing, M. Chipulu, U. Ojiako, and K. Kaparis, “Advanced inventory planning and forecasting solutions: A case study of the uktlcs chinook maintenance programme,” *Production Planning and Control*, vol. 25(1), pp. 73–90, 2014.
- 10 J. Fliege, K. Kaparis, and B. Khosravi, “Operations research in the space industry,” *European Journal of Operational Research*, vol. 217(2), pp. 233–240, 2012.
- 11 L. Galli, K. Kaparis, and A. Letchford, “Complexity results for the gap inequalities for the max-cut problem,” *Operations Research Letters*, vol. 40(3), pp. 149–152, 2012.
- 12 M. Downing, M. Chipulu, U. Ojiako, and K. Kaparis, “Forecasting in air force supply chains,” *International Journal of Logistics Management*, vol. 22(1), pp. 127–144, 2011.
- 13 M. Downing, M. Chipulu, U. Ojiako, and K. Kaparis, “Supply chain forecasting for the uk chinook fleet,” *OR Insight*, vol. 24, pp. 110–130, 2011.
- 14 L. Galli, K. Kaparis, and A. Letchford, “Gap inequalities for non-convex mixed-integer quadratic program,” *Operations Research Letters*, vol. 39(5), pp. 297–300, 2011.
- 15 K. Kaparis and A. Letchford, “Separation algorithms for 0-1 knapsack polytopes,” *Mathematical Programming*, vol. 124, pp. 69–91, 2010.
- 16 R. Teunter, O. Tang, and K. Kaparis, “Heuristics for the economic lot scheduling problem with returns,” *International Journal of Production Economics*, vol. 118(1), pp. 323–330, 2009.
- 17 K. Kaparis and A. Letchford, “Local and global lifted cover inequalities for the 0-1 multidimensional knapsack problem,” *European Journal of Operational Research*, vol. 186(1), pp. 91–103, 2008.
- 18 R. Teunter, O. Tang, and K. Kaparis, “Multi-product economic lot scheduling problem with separate production lines for manufacturing and remanufacturing,” *European Journal of Operational Research*, vol. 191, pp. 1241–1253–330, 2008.

Conference Proceedings

- 1 E.-M. Vretta, K. Bitsis, K. Kaparis, G. Paltayian, and A. C. Georgiou, “A stochastic bilevel dea-based model for resource allocation,” 1, vol. 7, 2023.  DOI: 10.3390/IOCM2023-14594.

Books and Chapters

- 1 L. Galli, K. Kaparis, and A. N. Letchford, “Gap inequalities for the max-cut problem: A cutting-plane algorithm,” in *Combinatorial Optimization*, A. R. Mahjoub, V. Markakis, I. Milis, and V. T. Paschos, Eds., Berlin, Heidelberg: Springer Berlin Heidelberg, 2012, pp. 178–188, ISBN: 978-3-642-32147-4.
- 2 K. Kaparis and A. N. Letchford, “Cover inequalities,” in *Encyclopedia of Operations Research and Management Science*, J. J. Cochran, Ed., Wiley/EORMS, 2010.
- 3 A. C. Georgiou, I. Konstantaras, and K. Kaparis, Eds., *Τεχνικές Προσομοίωσης στη Διοίκηση Επιχειρήσεων*. Θεσσαλονίκη: ΣΕΑΒ: Ελληνικά Ακαδημαϊκά Συγγράμματα και Βοηθήματα, 2009.
- 4 A. C. Georgiou, G. Oikonomou, G. Tsiotras, and K. Kaparis, Eds., *Μελέτες Περιπτώσεων Επιχειρησιακής Έρευνας*. Θεσσαλονίκη: Εκδόσεις Μπένου, 2009.

Sponsored Research

Current Projects

As Principal Investigator

Tec4MaaSEs

Technologies For Manufacturing as a Service Ecosystems. Horizon2020. The EU framework for Research and Innovation. Grant agreement no. 101138517, (2024-2027).

ER_Tec4MaaSEs

Technologies For Manufacturing as a Service Ecosystems. Enhancing Research 2023 funding programme, University of Macedonia. Grant agreement no. 82127, (06/2023 - 11/2023).

As co-Investigator

Plooto

Product Passport through Twinning of Circular Value Chains. Horizon2020. The EU framework for Research and Innovation. Grant agreement no. 101092008, (2023-2026).

In-Time 4 Water

Ανάπτυξη ενός καινοτόμου μοντέλου βιώσιμης διαχείρισης εφοδιαστικής αλυσίδας εμφιαλωμένων νερών. «ΕΡΕΥΝΗΤΙΚΑ ΣΧΕΔΙΑ ΚΑΙΝΟΤΟΜΙΑΣ» του Επιχειρησιακού Προγράμματος «Κεντρική Μακεδονία», ΕΣΠΑ 2014-2020, κωδικός έργου KMP6- 0078874, (2021 - 2024).

Past Projects

As Principal Investigator

CuPGraMi

On Cut Polytopes and Graph Minors. Separation Algorithms and Structural Properties.. Basic Research 2021 funding programme, University of Macedonia. Grant agreement no. 81374, (06/2021 - 09/2022)

As co-Investigator

Factlog

Energy-Aware Factory Analytics for Process Industries. Horizon2020. The EU framework for Research and Innovation. Grant agreement no. 869951, (2020-2023).

Alumil AAA

Μελέτη Σκοπιμότητας στα πλαίσια του έργου 'Κέντρο καινοτομίας και ανάπτυξης δεξιοτήτων του κλάδου του αλουμινίου με έμφαση στον ψηφιακό μετασχηματισμό και τη βιομηχανία 4.0'. Δράση «ΚΕΝΤΡΑ ΙΚΑΝΟΤΗΤΩΝ» της ΓΓΕΚ, ΕΣΠΑ 2014-2020, κωδικός έργου 81943, (05/2022 - 12/2022).

Papageorgiou Cardiology Dept.

Investigating performance indicators in an outpatient cardiology department. A simulation study. Papageorgiou outpatient cardiology department. (2015-2016).

From Graph Theory to Matroids

Algorithmic issues and applications. THALES programme: Co-financed by the European Union and Greek national funds through the Operational Program "Education and Lifelong Learning" of the National Strategic Reference Framework (NSRF), (2011 - 2015).

FGS Toolbox Add-on

















Multicriteria optimization add-on, for the FGS Toolbox. European Space Agency (ESA), Study contract report FGS-ECM-RfQ-1001 (2010-2011).

FGS Toolbox



Versatility of filtering techniques in non-linear programming optimisation. European Space Agency (ESA), Study contract report 22170/08/NL/ST (2008-2010).

Conferences & Posters



Conferences

- 2023  *Heuristic algorithms for multistage flowshop scheduling problem.* DIS2023, Prague, Czech Republic, September 2023.
- 2023  *Building Trust in Video Classification.* DIS2023, Prague, Czech Republic, September 2023.
- 2023  *A hybrid bilevel DEA approach for resource allocation and targeting under stochastic conditions.* IWAP2023, Thessaloniki, Greece, June 2023.
- 2022  *The introduction of Data Envelopment Analysis in Markovian settings. Hybrid models and extensions.* EURO2022, Helsinki, Finland, July 2022.
- 2022  *Generalised 2-Circulant Inequalities for the Max-Cut Problem.* EURO2022, Helsinki, Finland, July 2022.
- 2021  *Production scheduling for the steel reinforcement industry.* EURO2021, Athens, Greece, July 2021.
- 2021  *Evaluation of Wind Parks with Data Envelopment Analysis.* EURO2021, Athens, Greece, July 2021
- 2014  *On laminar matroids and b-matchings.* EURO2021, Athens, Greece, July 2021. IFORS 2014, Barcelona, Spain, July 2014.
- 2013  *Cutting planes for first-level RLT relaxations of mixed 0-1 programs.* Keynote presentation YoungOR, Exeter, UK, April 2013.
- 2012  *The Stochastic Network Loading Problem.* OR54 2012, Conference of the OR society, Edinburgh, UK, September 2012.
- 2012  *Complexity Results for the Gap Inequalities.* Aussois 2012, Workshop in Combinatorial Optimization, Aussois, France, January 2012.
- 2010  *Gap Inequalities for the Max-Cut Problem.* INFORMS 2010 Annual Conference, Austin, USA, November 2010.
- 2009  *Knapsack-based Cutting Planes for the Max-Cut Problem.* EURO2009 in Operational Research, Bonn, Germany, July 2009.
- 2008  *Cut Round and Fix. A heuristic for the 0-1 Multidimensional Knapsack Problem.* OR50 Annual Conference, York, UK, September 2008.
- 2007  *Separation algorithms for 0-1 Knapsack polytopes.* CO2008, Coventry, UK, March 2008.
- 2006  *Separation algorithms for 0-1 Knapsack polytopes.* Optimization Days 2007, Porto, Portugal, July 2007.

Posters

- 2016  *Investigating performance indicators and service quality improvement in an outpatient cardiology department.* ISPOR 2016 Annual International Meeting, Washington, DC USA, May 2016.
- 2011  *Gap Inequalities for Mixed Integer Quadratic Programs.* MIP 2011 Annual Workshop, Waterloo, Canada, June 2011.

Prizes

- 2008  *Kingsman Ph.D. Prize*, awarded by the department of Management Science in Lancaster University to the best doctoral researcher of the last two years.
- 2009  *O.R. Society annual Ph.D. Prize*, awarded by the department of Management Science in Lancaster University to the best doctoral researcher of the last two years. Awarded to the “Most Distinguished Body of Research leading to the Award of a Doctorate in the field of OR”.

PhD Students

- 2021-....
- 📖 *Large Scale Networks* with Konstantinos Tarkasis.
 - 📖 *Exact and Heuristic Methodologies for Scheduling Problems* with Kyriakos Bitsis.

Teaching Experience

University of Macedonia

- Undergraduate
- 📖 *Operational Research*, (2015-...).
 - 📖 *Quantitative Methods for Business Decision Making*, (2015-...).
 - 📖 *Mathematics for Economists II*, (2015-2017).
 - 📖 *Special Topics in Quantitative Methods*, (2016-2020).
 - 📖 *Advanced Mathematics*, (2017-2019).
 - 📖 *Applied Decision Making Lab*, (2021-...).
 - 📖 *Optimization Methods in Business Analytics*, (2021-...).
- Postgraduate
- 📖 *Quantitative Methods for Business Decision Making*, (MBA, 2016-2019).
 - 📖 *Management Science in Business Analytics*, (MBADS, 2019).
 - 📖 *Operational Research in Business Analytics*, (MIS, 2019).
 - 📖 *Tools for Decision Making and Optimisation*, (Health Care Management Programme, 2015-2020).

International Hellenic University

- Postgraduate
- 📖 *Applied Quantitative Methods for Decision Making*, (MSc in Sustainable agriculture and Business, 2018-2019).

Lancaster University

- Undergraduate
- 📖
- Postgraduate
- 📖 *MSCI517 Introduction to Programming using Python* (2017-2019).
 - 📖 *MSCI513 C++ Programming for Quantitative Finance* (2013-2017).
 - 📖 *STOR601 C Programming for Optimisation* (2015-2017).