Florios J. Kostas Curriculum Vitae, March 2024

Personal Information

Date of Birth: 11th June, 1977

Nationality: Greek

Address: Vironas, Athens, Greece

Telephone: +30 210 7654777, +30 6943522953

E-mail: cflorios@central.ntua.gr, cflorios@math.uoa.gr, cflorios@aueb.gr

Web: http://sites.google.com/site/kflorios

Profession: Chemical Engineer & Operational Researcher, TCG¹ member (2003),

HACE² member (2004), HELORS³ member (2007), EURO-EWG⁴ member

(2007)

Research: h index: 11, #900 citations & #16 papers (source: Scopus)

Education

2004 – 2010 National Technical University of Athens (NTUA). PhD in

Operational Research. Title of PhD Thesis: "Multi Objective Combinatorial Optimization. Mathematical programming and application in energy planning and econometrics" (Supervisor: Assoc. Professor

George Mavrotas).

2001 – 2003 National Technical University of Athens (NTUA). Faculties of

Chemical Engineering (coordinator faculty), Mechanical Engineering, Civil Engineering, Naval Engineering, Applied Mathematics and Physical Sciences, MSc in Computational Mechanics (Interdisciplinary).

Grade: 9,43/10

1995 – 2001 National Technical University of Athens (NTUA). Faculty of

Chemical Engineering. Grade: 8,28/10

Work Experience

2018 – now n & k Technology, Inc. Consultant Engineer in a US Company

concerned with Metrology Systems for the Semiconductor Industry. Location of firm: San Jose, California, Silicon Valley. Full-time position working remotely from Athens, Greece. Supervisor: Jeff Roberts, Application Engineering Manager. (http://www.nandk.com/)

1 Technical Chamber of Greece

² Hellenic Association of Chemical Engineers

³ Hellenic Operational Research Society

⁴ EURO Working Group on MultiCriteria Decision Aiding

- 2015 2017 Research Center for Astronomy and Applied Mathematics (AA)
 Academy of Athens. Post-Doctoral Researcher in Machine Learning.
 Supervisor: Research Director, Dr. Manolis Georgoulis.
- 2014 2015 **Department of Statistics (AUEB)** Athens University of Economics and Business. Post-Doctoral Researcher in Statistics. Supervisor: Professor, Vassilis Vasdekis.
- 2012 2013 Department of International and European Economics Studies (AUEB) Athens University of Economics and Business. Post-Doctoral Researcher in Econometrics. Supervisor: Professor, Yannis Bilias.
- 2010 2012 Laboratory of Industrial end Energy Economics (LIEE/NTUA)
 National Technical University of Athens. Post-Doctoral Researcher.
- 2004 2010 Laboratory of Industrial end Energy Economics (LIEE/NTUA)
 National Technical University of Athens. PhD Candidate. Participation in one Greek research project ('Leucippus'). Tutoring in three Diploma Theses. Administration of LIEE's website. Director: Professor, Danae Diakoulaki.

Research Projects as Principal Investigator

K. Florios, as Principal Investigator "HEROIDA: Heuristic and Exact Real-integer Optimization methods In Discrete Choice Analysis", The Hellenic Foundation for Research and Innovation, 2nd Call for H.F.R.I. Research Projects for the support of Post-doctoral Researchers. Official start: November 2020. Official end: November 2023. Scientific Area: Social Sciences, Scientific Field 1: Economics and Business, Scientific Field 2: Econometrics and Mathematical Programming, Evaluation Score: 92.9/100. Budget: 144.6k€ (Athens University of Economics and Business: 144.6k€)

Research Projects as member of the team

- **K. Florios, as a member of the FLARECAST team** "FLARECAST: Flare Likelihood and Region Eruption Forecasting", European Commission, The EU Framework Programme for Research and Innovation HORIZON2020. Official start: July 2015. Official end: December 2017. Budget: 2.4M€ (Academy of Athens: 370k€).
- **K. Florios, V. Vasdekis, I. Moustaki, D. Rizopoulos** "Composite Likelihood inference in dynamic latent variable models for longitudinal multidimensional contingency tables", AUEB Research Center, ARISTEIA II. Official start: Febr 2014. Official end: July 2015. Budget: 100k€.

- 2013 2014
- **K. Florios, Y. Bilias,** "Exact computation of censored least absolute deviations estimation", AUEB Research Center, Program Research Reinforcement 2012-2013 'Action Two. 2012-2013. Reinforcement of Post-Doctoral Researchers for the promotion of research'. Official start: 5.12.2012. Official end: 4.12.2013. Budget: 10k€.
- 2006 -2007
- **K. Florios, G. Mavrotas,** "Development of multiobjective evolutionary algorithms for multiobjective combinatorial optimization problems and comparison to multiobjective mathematical programming", NTUA Fundamental Research Support Senate, Program for Fundamental Research Support 'Lefkippos'. Official start: 1.1.2006. Official end: 31.12.2007. Budget: 15k€.

Higher Education Teaching

- *2017* Depa
 - **Department of Public Administration. Panteion University of Social and Political Sciences** "Introduction to Operations Research (Linear Programming)", 8th Semester, Bachelor's Degree. Adjunct Assistant Professor. Official start: February 2017. Official end: June 2017. Budget: 3k€ (teaching language is Greek).
- 2018
- **Department of Mathematics. National and Kapodistrian University of Athens** "Computational Methods in Decision Theory (Linear, Non-Linear & Integer Programming)", 6th Semester, Bachelor's Degree. Adjunct Assistant Professor. Official start: March 2018. Official end: August 2018. Coverage of Full-Time Equivalent: 67% (teaching language is Greek).
- 2020
- **Department of Economics. Athens University of Economics and Business** "Introduction to Econometrics", 4th Semester, Bachelor's Degree. Adjunct Assistant Professor. Official start: February 2020. Official end: June 2020. Budget: 4k€ (teaching language is Greek).
- 2020
- **Department of Economics. Athens University of Economics and Business** "Econometrics II", 6th Semester, Bachelor's Degree. Adjunct Assistant Professor. Official start: February 2020. Official end: June 2020. Budget: 4k€ (teaching language is Greek).

Skills

Main Skills:

Strong research and development skills
Adequate theoretical background coupled with project driven spirit
Good oral and written communication
Ability to work as part of a team and on my own initiative
Report Writing and Presentation skills

Computer Skills: Programming Languages: FORTRAN, Visual Basic, Pascal, Delphi,

MATLAB, IDL, GAMS, R, Python, C, C++

Operating Systems: Windows XP/VISTA/7/10, UNIX, LINUX

Compilers: ifort, f95, gcc, fpc

Packages: PHOENICS, LIMDEP, DECISION LAB, GUROBI, CPLEX

Other: Visio, Stata, Tecplot, WINNN Web Publishing: MS Office Publisher 2007.

Languages: Greek (Native)

English - Cambridge Certificate of Proficiency in English, 1991, Grade C

German – Zertifikat Deutsch als Fremdsprache, 1994, Grade A

Journals

2010

International Journals:

K. Florios, S. Skouras "Exact computation of max weighted score estimators." Journal of Econometrics 146 86-91. (Impact Factor 2022: 6.3)

G. Mavrotas, D. Diakoulaki, K. Florios, P. Georgiou "A mathematical programming framework for energy planning in services' sector buildings under uncertainty in load demand: The case of a hospital in Athens." Energy Policy 36 2415-2429. (Impact Factor 2022: 9.0)

G. Mavrotas, J. Figueira, K. Florios "Solving the bi-objective multi-dimensional knapsack problem exploiting the concept of core." Applied Mathematics and Computation 215 2502-2514. (Impact Factor 2022: 4.0)

K. Florios, G. Mavrotas, D. Diakoulaki "Solving multiobjective, multiconstraint knapsack problems using mathematical programming and evolutionary algorithms." European Journal of Operational Research 203 14-21. (Impact Factor 2022: 6.4)

G. Mavrotas, K. Florios, D. Vlachou "Energy planning of a hospital using mathematical programming and monte carlo simulation for dealing with uncertainty in the economic parameters." Energy Conversion and Management 51 722-731. (Impact Factor 2022: 10.4)

G. Mavrotas, K. Florios "An improved version of the augmented ε -constraint method (AUGMECON2) for finding the exact pareto set in multi-objective integer programming problems." Applied Mathematics and Computation 219 9652-9669. (Impact Factor 2022: 4.0)

2014 K. Florios, G. Mavrotas "Generation of the exact Pareto set in multiobjective traveling salesman and set covering problems." Applied Mathematics and Computation 237 1-19. (Impact Factor 2022: 4.0) 2015 K. Florios, I. Moustaki, D. Rizopoulos, V.G.S. Vasdekis "A modified weighted pairwise likelihood estimator for a class of random effects models." Metron 73 217-228. (Impact Factor 2022: 0.8) 2015 G. Mavrotas, K. Florios, J.R. Figueira "An improved version of a core based algorithm for the multi-objective multi-dimensional knapsack problem: A computational study and comparison with metaheuristics." Applied Mathematics and Computation 270 25-43. (Impact Factor 2022: 4.0) K. Florios, I. Kontogiannis, S.H. Park, J. Guerra, F. Benvenuto, 2018 **D.S. Bloomfield, M.K. Georgoulis** "Forecasting solar flares using magnetogram-based predictors and machine learning." Solar Physics 293 (2), art. no. 28. (Impact Factor 2022: 2.8). 2018 **K. Florios** "A hyperplanes intersection simulated annealing algorithm for maximum score estimation." Econometrics and Statistics 8 37-55. (Impact Factor 2022: 1.9) Y. Bilias, K. Florios, S. Skouras "Exact computation of censored 2019 least absolute deviations estimator." Journal of Econometrics 212 584-606. (Impact Factor 2022: 6.3) 2020 K. Florios, I. Contopoulos, V. Christofilakis, G. Tatsis, S. Chronopoulos, C. Repapis, V. Tritakis "Pre-seismic Electromagnetic Perturbations in two Earthquakes in Northern Greece." Pure and Applied Geophysics 177 787-799. (Impact Factor 2022: 2.0) 2021 K. Florios, I. Contopoulos, G. Tatsis, V. Christofilakis, S. Chronopoulos, C. Repapis, V. Tritakis "Possible Earthquake Forecasting in a Narrow Space-Time-Magnitude Window." Earth Science Informatics 14(1) (2021) 349-364. (Impact Factor 2022: 2.8) 2021 M. Georgoulis, D. S. Bloomfield, M. Piana, A. M. Massone, M. Soldati, P. T. Gallagher, E. Pariat, N. Vilmer, E. Buchlin, F. Baudin, A. Csillaghy, H. Sathiapal, D. R. Jackson, P. Alingery, F. Benvenuto, C. Campi, K. Florios, C. Gontikakis, C. Guennou, J. A. Guerra, I. Kontogiannis, V. Latorre, S. A. Murray, S-H Park, S. von Stachelski, A. Torbica, D. Vischi, M. Worsfold "The Flare Likelihood and Region Eruption Forecasting (FLARECAST) Project: Flare forecasting in the big data and machine learning era.", Journal of Space

Weather and Space Climate, Volume 11, Article 39. (Impact Factor

2022: 3.3)

V. Tritakis, I. Contopoulos, C. Florios, G. Tatsis, V. Christofilakis, G. Baldoumas, C. Repapis, " Anthropogenic Noise and Its Footprint on ELF Schumann Resonance Recordings." Frontiers in Earth Science, Volume 9, Article 646277. (Impact Factor 2022: 2.9)

Working papers

<u> </u>	1
2024	K. Florios, A. Louka, Y. Bilias "LASSO can fix the statistical properties of the CLAD estimator under heavy censoring." (download SSRN report).
2023	K. Florios, A. Louka, Y. Bilias "Exact computation of censored least absolute deviations estimator for panel data with fixed effects." (download SSRN report).
2022	K. Florios, A. Louka, Y. Bilias "Tabu search for maximum score estimator computation." (download SSRN report).
2019	K. Florios, I. Moustaki, D. Rizopoulos, V.G.S. Vasdekis "A proposal for creating a weighted composite likelihood estimator using CLIC." (under preparation)
2017	K. Florios, I. Kontogiannis, S.H. Park, J. Guerra, F. Benvenuto, D.S. Bloomfield, M.K. Georgoulis "Forecasting solar flares using magnetogram-based predictors and machine learning." (download)
2016	K. Florios, I. Moustaki, D. Rizopoulos, V.G.S. Vasdekis "Dantzig Selector methods for model choice in Generalized Linear Mixed Models." (under preparation)
2013	Y. Bilias, K. Florios, S. Skouras "Exact computation of censored least absolute deviations estimators." (<u>download</u> SSRN report).
2007	K. Florios, S. Skouras "A note on exact computation of max weighted score estimators by mixed integer programming." (download SSRN report).

European Project Meetings

- **K. Florios** "Prototypal software package realizing standard Machine learning algorithms." 1st Full Consortium FLARECAST Meeting, Trinity College Dublin (TCD), School of Physics, Dublin, January 14-15, 2016.
- **K. Florios** "Prototypal software package realizing {advanced Machine Learning, non-Machine Learning} algorithms." 2nd Full Consortium FLARECAST Meeting, University of Genova (UniGe), Department of Mathematics, Genova, June 27-28, 2016.

K. Florios "Forecasting solar flares using magnetogram-based predictors and machine learning." FLARECAST Science Workshop, Observatoire de Paris, Meudon, Paris, June 26-29, 2017.

Conferences

International Conferences:

2018	M.K. Georgoulis, S. Bloomfield, M. Worsfold, D. Jackson, A.M. Massone, M. Piana, C. Campi, F. Benvenuto, K. Florios "Forecast verification in the Framework of the EU FLARECAST project." 42 nd Committee on Space Research Scientific Assembly (COSPAR2018), California Institute of Technology (Caltech), 14 – 22 July 2018, Pasadena, California, USA.
2017	K. Florios, I. Moustaki, D. Rizopoulos, V. Vasdekis "A weighted composite likelihood estimator through an information criterion", 9 th Conference of the Eastern Mediterranean Region and the Italian Region of the International Biometric Society, 8 – 12 May 2017, Thessaloniki, Greece.
2015	V. Vasdekis, K. Florios, I. Moustaki, D. Rizopoulos "A Dantzig selector composite likelihood approach for multivariate generalized linear mixed models", International Meeting of the Psychometric Society (IMPS 2015), 12 – 16 July 2015, Beijing Normal University, Beijing, China.
2015	Y. Bilias, K. Florios, S. Skouras "Exact computation of censored least absolute deviations estimator", Boneyard Econometrics IV Conference, University of Illinois at Urbana-Champaign, Department of Economics, 17 April 2015, Urbana, IL, USA.
2014	G. Mavrotas, J. Figueira, K. Florios "Generalizing the core concept for multi-objective multi-dimensional knapsack problems and comparison to evolutionary algorithms", 79 th Meeting of the European Working Group Multiple Criteria Decision Aiding (MCDA79), The Association of European Operational Research Societies, 3-5 April 2014, Athens, Greece.
2011	K. Florios, G. Mavrotas, "Application of the maximum score maximum profit estimator to stocks of the banking sector in the Athens Stock Exchange", 7 th GRACM International Congress on Computational Mechanics (GRACM7), Greek Association of Computational Mechanics, 30 June - 2 July 2011, Athens, Greece.
2008	G. Mavrotas, J. Figueira, K. Florios "Solving bi-objective multidimensional knapsack problems exploiting the concept of core", 67 th Meeting of the European Working Group Multiple Criteria Decision Aiding (MCDA67), The Association of European Operational Research Societies, 3-5 April 2008, Rovaniemi, Finland.
2007	K. Florios, G. Mavrotas, D. Diakoulaki "Solving bi and tri criteria knapsack instances using mathematical programming and evolutionary algorithms: Results and analysis", 66th meeting of the EURO Working

Group on Multicriteria Decision Aiding (MCDA66), October 18-20, 2007,

Marrakech, Morocco.

2007 G. Mavrotas, D. Diakoulaki, P. Georgiou, K. Florios "Energy planning in buildings under demand uncertainty using Multi-Objective programming and the minimax regret criterion: An implementation in GAMS", 22nd European Conference on Operational Research (EURO XXII), The Association of European Operational Research Societies, July 8-11 2007, Prague, Czech Republic. 2006 G. Mavrotas, K. Florios, P. Georgiou, D. Diakoulaki "A MOMILP model for hospitals energy rehabilitation handling uncertainty in load profiles", 19th Mini-EURO Conference, Operations Research Models and Methods in the Energy Sector (ORMMES), The Association of European Operational Research Societies, September 6-8 2006, Coimbra, Portugal. 2006 **G. Mavrotas, K. Florios, P. Georgiou**, "Energy planning in buildings under uncertainty in fuel costs: The case of a hospital in Greece", 16th European Symposium on Computer Aided Process Engineering (ESCAPE16), European Federation of Chemical Engineering (EFCE), July 9-13, 2006, Garmisch-Partenkirchen, Germany (download, 2nd .pdf file from top, id: 1095.pdf). K. Florios, G. Mavrotas, "Urban solid waste collection in peak 2006 demand periods via the simulated annealing method", 2nd International Conference and Exhibition organized by the Hellenic Solid Waste Management Association, Hellenic Solid Waste Management Association (HSWMA), February 3-4, 2006, Athens, Greece. K. Florios, C. Kiranoudis, G. Mavrotas, "Heuristics for urban solid 2005 waste collection", 5th International Exhibition and Conference on Environmental Technology (HELECO'05), Technical Chamber of Greece, Exhibition Centre HELEXPO, February 3-6, 2005, Marousi, Athens, Greece (in english, 6th .pdf file from top).

Greek Conferences:

2017	K. Florios, I. Kontogiannis, S.H. Park, J. Guerra, F. Benvenuto, M.K. Georgoulis "Forecasting solar flares using magnetogram-based predictors and machine learning.", 13 th Hellenic Astronomical Conference, Hellenic Astronomical Society, 2-6 July, Irakleion, Greece.
2013	K. Florios, G. Mavrotas "Generation of the exact Pareto set in multi- objective traveling salesman and set covering problems", 24 th Conference of the Hellenic Operational Research Society, 26-28 September, Athens, Greece (in English).
2013	K. Florios, S. Skouras, Y.Bilias "Computation of censored least absolute deviations estimators by mixed integer programming", 9 th Hellenic Chemical Engineering Conference, May 23-25 2013, Athens, Greece (in English).
2012	G. Mavrotas, K. Florios "Finding the exact Pareto set in multiple objective integer programming problems using an improved version of the epsilon constraint method", 23 rd Conference of the Hellenic Operational Research Society, 12-14 September, Athens, Greece (in English).

2008 K. Florios, G. Mavrotas, D.Diakoulaki "SMS-UTA: Semiparametric maximum score – utilité additive", 20th Conference of the Hellenic Operational Research Society, 19-21 June, Spetses, Greece. E. Koutoulakos, K. Florios, "Development and application of genetic 2005 algorithms in multivariate mathematical functions optimization", 5th Hellenic Chemical Engineering Conference, May 26-28 Thessaloniki (in Greek). K. Florios, C. Kiranoudis, "Green reverse logistics. The household 2003 waste collection problem", 4th Hellenic Chemical Engineering Conference, May 29-31, 2003, Patras (in Greek). K. Florios, G. Mavrotas, D. Diakoulaki, "Forecasting international 2001 spot prices of fuels and other commodities using artificial neural networks. A comparison to traditional statistical techniques", 3rd Hellenic Chemical Engineering Conference, May 31-June 2, 2001.

Summer Schools

- **K. Florios, S. Skouras** "A note on exact computation of max weighted score estimators by mixed integer programming", 6th Conference on Research on Economic Theory and Econometrics (CRETE2007), AUEB, July 9-12 2007, Naxos, Greece (download).
- **Y. Bilias, K. Florios, S. Skouras** "Computation of censored least absolute deviations estimators by mixed integer programming", 12th Conference on Research on Economic Theory and Econometrics (CRETE2013), AUEB, July 14-18 2013, Naxos, Greece.
- **Y. Bilias, K. Florios, S. Skouras** "Exact computation of the maximum score estimator in the ordered response model by mixed integer programming", 13th Conference on Research on Economic Theory and Econometrics (CRETE2014), AUEB, July 13-17 2014, Milos, Greece.
- **K. Florios, I. Moustaki, D. Rizopoulos, V. Vasdekis** "A modified weighted pairwise likelihood estimator for a class of random effects models", 14th Conference on Research on Economic Theory and Econometrics (CRETE2015), AUEB, July 12-16 2015, Chania, Greece.
- **K. Florios, A. Louka, Y. Bilias** "Tabu search for maximum score estimator computation", 20th Conference on Research on Economic Theory and Econometrics (CRETE2022), AUEB, July 11-15 2022, Tinos, Greece.

Invited Talks

K. Florios, S. Skouras, "Computation of maximum score type estimators by mixed integer programming." PhD Seminar Series, Department of International and European Economic Studies, Athens University of Economics and Business, April 18, 2007, Athens (download).

2016 K. Florios, I. Kontogiannis, S.H. Park, J. Guerra, F. Benvenuto, M.K. Georgoulis "Forecasting solar flares using magnetogram-based predictors and machine learning." Weekly Research Seminar Series, Research Center for Astronomy and Applied Mathematics, Academy of Athens, November 29, 2016, Athens. (download). 2018 Y. Bilias, K. Florios, S. Skouras "Exact Computation of censored least absolute deviations estimator", Research Seminar in Department of Economic Sciences, University of Crete, June 13 2018, Rethimno, Greece. 2018 **K. Florios,** "Possibility of Earthquake Forecasting Within a Narrow Time-Space Window" Weekly Research Seminar Series, Research Center for Astronomy and Applied Mathematics, Academy of Athens, December 11, 2018, Athens.

Reviewer

2011 - 2024 Applied Mathematics and Computation (3)

Astrophysical Journal (4)

Central European Journal of Operations Research (1)

Computational Optimization and Applications (1)

Computers & Industrial Engineering (2)

Computers & Operations Research (4)

Control and Cybernetics (1)

Discrete Optimization (1)

Electric Power Systems Research (1) Energy – The International Journal (1)

European Journal of Operational Research (4)

Expert Systems with Applications (1)

International Journal of Environmental Research and Public Health (1)

International Journal of Information Technology & Decision Making (1)

International Journal of Multicriteria Decision Making (8)

Journal of Applied Econometrics (1)

Journal of Engineering Mathematics (1)

Journal of Heuristics (1)

Journal of Multi-Criteria Decision Analysis (1)

Operational Research: An International Journal (4)

Optimization (1)

Optimization Letters (1)

RAIRO - Operations Research (1)

Supervision of Postdoctoral Research Associates

2021/7-2023/11 **Alexandros LOUKA**, PhD Economics AUEB, postdoctoral research associate in the H.F.R.I. Research Project «HEROIDA» where I am the Principal Investigator (PI).

Miscellaneous

2007	Publication in GAMS Model Library. Model MWS (No.331) (http://www.gams.com/modlib/libhtml/mws.htm) (with S. Skouras)
2013	Publication in GAMS Model Library. Model EPSCMMIP (No.384) (http://www.gams.com/modlib/libhtml/epscmmip.htm) (with G. Mavrotas)
2014	Publication in GAMS Model Library. Model CLAD (No.397) (http://www.gams.com/modlib/libhtml/clad.htm) (with Y. Bilias and S. Skouras)
2018	HMI Science Nuggets contribution, April 2018 (# 95: Forecasting Solar Flares Using Magnetogram-Based Predictors and Machine Learning, hmi.stanford.edu/hminuggets/?p=2423 , contributed by Kostas Florios for the Stanford HMI nuggets popular Science portal).

Scholarships

2004 – 2007	Greek State Scholarships Foundation (IKY). PhD Scholarship.
<i>2001 – 2003</i>	National Technical University of Athens. MSc Scholarship.
<i>1995 – 2001</i>	Hellenic Ministry of National Education. Diploma Scholarship
1997 – 1998	Greek State Scholarships Foundation (IKY). Yearly Prize
1996 – 1997	Greek State Scholarships Foundation (IKY). Yearly Prize