

# Charalampos P. Triantafyllidis

FOUNDATIONS Health data analytics ; Mathematical Modelling ; Optimisation ; Machine Learning

EDUCATION

- **B.Sc., M.Sc. Ph.D. in Applied Computer Science, University of Macedonia, Greece**  
Thesis (co-advised by MIT - USA) : *A non-monotonic infeasible interior-exterior point algorithm for Linear Programming, January 2014*

EXPERIENCE

- **Imperial College London, School of Public Health**  
MRC Early Career Research Fellow July 2021 – today  
*Network Analysis in Cardiopulmonary Disease Complications*
- **University of Oxford, Department of Oncology, Computational Biology & Integrative Genomics**  
Senior Research Scientist April 2019 – June 2021  
*ERC : Mathematical reconstruction of cancer networks.*
- **University of Oxford, Smith School of Enterprise and the Environment**  
Postdoctoral Researcher June 2018 – March 2019  
*Risk exposure of asset-level data*
- **University College London, Department of Chemical Engineering**  
Post-Doctoral Research Associate May 2016 – June 2018  
*Scientific software development for mathematical modelling of multiple classes of optimization problems*
- **Imperial College London, Centre for Process Systems Engineering**  
Post-Doctoral Research Associate March 2015 – April 2016  
*Supply chain optimization in complex energy networks under sustainable development constraints*

## PUBLICATIONS

- [1] **C.P. Triantafyllidis** and Samaras N., *A new non-monotonic infeasible simplex-type algorithm for Linear Programming*, PeerJ Computer Science, 6:e265, 2020. DOI: <http://doi.org/10.7717/peerj-cs.265> (**impact factor: 3.09**).
- [2] **C.P. Triantafyllidis** and L.G. Papageorgiou, *An integrated platform for intuitive mathematical programming modeling using L<sup>A</sup>T<sub>E</sub>X*, PeerJ Computer Science, 4e:1612018, 2018. DOI: 10.7717/peerj-cs.161 (**impact factor: 3.09**).
- [3] **C.P. Triantafyllidis**, R. Koppelaar, X. Wang, K.H. van Dam and N. Shah, *An integrated optimisation platform for sustainable resource and infrastructure planning*, Environmental Modelling & Software, Vol. 101C, pp. 146-168, 2018 (**impact factor: 4.552**).
- [4] X. Wang, M. Guo, K.H. van Dam, R.H.E.M. Koppelaar, **C.P. Triantafyllidis** and N. Shah, *A nexus approach for sustainable urban Energy-Water-Waste systems planning and operation*, Environmental Science & Technology (ACS), Vol : 52 (5), pp 3257–3266, 2018 (**impact factor: 7.864**).
- [5] Xiaonan Wang, Koen H. van Dam, **C.P. Triantafyllidis**, Rembrandt H.E.M. Koppelaar, and Nilay Shah, *Energy-Water Nexus Design and Operation towards the Sustainable Development Goals*, Computers & Chem. Engineering, 2019, DOI:10.1016/j.compchemeng.2019.02.007.
- [6] N. Bieber, J. H. Ker, X. Wang, **C.P. Triantafyllidis**, K. H. van Dam, R.H.E.M. Koppelaar and N. Shah, *Sustainable planning of the Energy-Water-Food nexus using decision making tools*, Energy Policy, Vol. 113C, pp. 584-607, 2018 (**impact factor: 5.042**).
- [7] Koppelaar, R.H.E.M.; Sule, M.N.; Kis, Z.; Mensah, F.K.; Wang, X.; **C.P. Triantafyllidis**; Dam, K.H.; Shah, N. *Framework for WASH Sector Data Improvements in Data-Poor Environments, Applied to Accra, Ghana*. Water 2018, 10, 1278.
- [8] X. Wang, K. H. van Dam, **C.P. Triantafyllidis**, R.H.E.M. Koppelaar, N. Shah, *Water and Energy Systems in Sustainable City Development: A Case of Sub-saharan Africa*, In Procedia Engineering, Vol: 198, pp 948-957, 2017.
- [9] X. Wang, M. Guo, K. H. van Dam, R. H.E.M. Koppelaar, **C.P. Triantafyllidis** and N. Shah, *Waste-Energy-Water systems in sustainable city development using the resilience.io platform*, Proceedings of the 27<sup>th</sup> European Symposium on Computer Aided Process Engineering – ESCAPE 27 October 1<sup>st</sup> - 5<sup>th</sup>, Barcelona, Spain 2017.
- [10] X. Wang, K.H. van Dam, **C. Triantafyllidis**, R. Koppelaar, N. Shah. *Water and energy systems in sustainable city development*, Proceedings of the Urban Transitions Conference, Shanghai, September 2016.

- [11] Koen H. van Dam, Xiaonan Wang, Rembrandt H.E.M. Koppelaar, **Charalampos Triantafyllidis**, Wentao Yang and Nilay Shah. *Agent-based Modelling of Urban Water and Sanitation Infrastructure Use in GAMA, Ghana*, 1st workshop on Agent Based Modelling of Urban Systems (ABMUS2016) at AAMAS2016, Singapore, May 2016.
- [12] A. Dominguez-Ramos, **C.P. Triantafyllidis**, Sh. Samsatli, N. Shah, and A. Irabien, *Renewable electricity integration at a regional level: Cantabria case study*, Proceedings of the 26<sup>th</sup> European Symposium on Computer Aided Process Engineering - ESCAPE 26, 2016.
- [13] **C.P. Triantafyllidis** and N. Samaras, *Three nearly scaling-invariant versions of an exterior point algorithm for Linear Programming*, Optimization: A Journal of Mathematical Programming and Operations Research, Vol. 64, No. 10, pp. 2163-2181, 15 May 2014 (**impact factor: 1.206**).
- [14] N. Samaras, A. Sifaleras, and **C.P. Triantafyllidis**, *A primal-dual exterior point algorithm for linear programming problems*, Yugoslav Journal of Operations Research, Vol. 19, pp. 123-132, 2009.
- [15] K. Paparrizos, N. Samaras, and **C.P. Triantafyllidis**, *A computational study of exterior point simplex algorithm variations*, Spetses, Greece, 19-21 June 2008, 20<sup>th</sup> Conference of the Hellenic Operational Research Society (EEEE), pp. 777-785.

#### WORKING PAPERS

- [1] L. Winchester, L. van Bijsterveldt, A. Dhawan, S. Wigfield, **C. Triantafyllidis**, S. Haider, A. McIntyre, T.C. Humphrey, A.L. Harris, F.M. Buffa , *A Dicer-to-Argonaute genomic switch regulates miRNA biogenesis in cancer*, doi: <https://doi.org/10.1101/2021.08.30.458145>, submitted.
- [2] **Triantafyllidis, C.P.** , Alessandro Barberis, Ana Miar Cuervo, Philip Charlton, Fiona Hartley, Linda Van Bijsterveldt, Enio Gjerga, Julio Saez Rodriguez and Francesca M. Buffa, *Reconstructing the functional effect of TP53 mutational variation on its regulon using gene network modelling*, 2021, (in preparation).
- [3] **Triantafyllidis, C.P.** , V. Charitopoulos, S. Tsoka and L. Papageorgiou, *Simplifying non linear mathematical programming modelling using L<sup>A</sup>T<sub>E</sub>X*, 2021, submitted.
- [4] **Triantafyllidis, C.P.** , *Mixed-Integer Linear Programming with Exterior Point Algorithms*, 2021, (in preparation).

#### DISTINCTIONS

**TOP 5%** in Greece from a total of 69,498 candidates on nation-wide exams for B.S. degree entry (score: 19,180/20,000).

#### CERTIFICATES

**Massachusetts Institute of Technology: Machine Learning with Python: from Linear Models to Deep Learning**, 2019.  
<https://courses.edx.org/certificates/c9538249c8e24ac691de3e2f33e52c00>

#### REFERENCES

- Professor John N. Tsitsiklis, Massachusetts Institute of Technology ([jnt@mit.edu](mailto:jnt@mit.edu))
- Professor Francesca M. Buffa , University of Oxford ([francesca.buffa@oncology.ox.ac.uk](mailto:francesca.buffa@oncology.ox.ac.uk))
- Professor Lazaros Papageorgiou, University College London ([l.papageorgiou@ucl.ac.uk](mailto:l.papageorgiou@ucl.ac.uk))
- Professor Nilay Shah, *Officer of the Order of the British Empire*, Imperial College London ([n.shah@imperial.ac.uk](mailto:n.shah@imperial.ac.uk))