

# Charalampos P. Triantafyllidis

**FOUNDATIONS** Algorithms; Mathematical Modelling; Computational Optimization; Scientific Software Development; Machine Learning.

**EDUCATION**

- **B.S., M.S. Ph.D. in Applied Informatics, University of Macedonia, Greece**  
Thesis (co-advised by MIT - USA) : *A non-monotonic infeasible interior-exterior point algorithm for Linear Programming, Jan. 2014* (score: *Excellent/Highest*)

**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.  
Credit url : <https://courses.edx.org/certificates/c9538249c8e24ac691de3e2f33e52c00>

**Massachusetts Institute of Technology (audit): *Probability - The Science of Uncertainty and Data***, 2020.

**EXPERIENCE**

- **University of Oxford, Department of Oncology, Computational Biology & Integrative Genomics**  
Senior Research Scientist April 2019 – today  
*Mathematical reconstruction of cancer networks (ERC).*
- **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 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*
- **University of Oxford, Department of Engineering Sciences**  
Visiting Scholar April 2015 – May 2015
- **Massachusetts Institute of Technology, Electrical Engineering & Computer Science**  
Visiting PhD student May 2012

**PUBLICATIONS:**  
**COMPUTER**  
**SCIENCE**

- [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] **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**).
- [5] 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.
- [6] 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.

**PUBLICATIONS:**  
**APPLIED**  
**OPERATIONS**  
**RESEARCH**

- [1] 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.

- [2] 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.
- [3] 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**).
- [4] 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**).
- [5] 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.
- [6] 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.
- [7] 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.

#### GRANTS

- Served as a reviewer on UKRI/EPSCRC grant proposals
- Submitted a Marie-Curie Experienced Researcher Grant proposal supported by University of Oxford (2015).

#### REFERENCES

- John N. Tsitsiklis, MIT ([jnt@mit.edu](mailto:jnt@mit.edu))
- Lazaros Papageorgiou, University College London ([l.papageorgiou@ucl.ac.uk](mailto:l.papageorgiou@ucl.ac.uk))
- Nilay Shah, Imperial College London ([n.shah@imperial.ac.uk](mailto:n.shah@imperial.ac.uk))