Dr Charalampos P. Triantafyllidis

Lecturer, Nuffield Department of Medicine
University of Oxford, OX3 7BN, Oxford, UK
Email: harry.triantafyllidis@ndm.ox.ac.uk
https://www.ndm.ox.ac.uk/team/charalampos-triantafyllidis

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

Distinctions

Top 5% in Greece among 69,498 candidates (BSc Entry Nation-Wide Exams, July 2000)

Academic Positions

University of Oxford, Oxford, UK
Lecturer in Modelling for Global Health, Nuffield Department of Medicine — Oct 2024 – Present

Goldsmiths University, London, UK
Lecturer in Computer Science, Department of Computing — Oct 2023 – Oct 2024

University of Greenwich, London, UK
Lecturer in Computer Science, School of Computing & Mathematical Sciences — Sept 2022 – Sept 2023

Research Experience

IMPERIAL, London, UK

- *School of Public Health, MRC Early Career Research Fellow* — July 2021 – Aug 2022
  Machine Learning for Cardiopulmonary Disease Complications
- *Centre for Process Systems Engineering, Post-Doctoral Research Associate* — March 2015 – April 2016
  Network Optimization and modelling under sustainable development constraints

University of Oxford, Oxford, UK

- *Medical Sciences Division, Department of Oncology, Senior Research Scientist* — April 2019 – June 2021
  ERC: Machine Learning/Data Science and Network modelling/optimization for cancer networks.
- *Smith School of Enterprise, Postdoctoral Researcher* — June 2018 – March 2019
  Software Engineering supervisor for Asset Risk management under sustainable development

University College London, London, UK
Centre for Process Systems Engineering, Post-Doctoral Research Associate — May 2016 – June 2018
Scientific software development for mathematical modelling of multiple classes of optimization problems

Teaching

Lecturer, University of Oxford, Nuffield Department of Medicine

Key tasks: — October 2024 – today

Supervising M.Sc Theses

Teaching: Mathematics for modellers, NCDs, Translational Science, Data Science

Assistant Professor in Computer Science, Goldsmiths University, London

Key tasks: — October 2023 – October 2024

Supervising B.Sc Theses / FYP (5 students)

Module Leader: (∼200+ students cohorts) : i) Machine Learning (online), ii) Computing Project 1 & iii) Algorithms I

Lecturer in Computer Science, University of Greenwich, London

Key tasks: — September 2022 – September 2023

Supervising B.Sc Theses / FYP (4 students) and M.Sc Dissertations (10 students)

Teaching (∼200 students cohorts) : i) Web and intranet Content Management, ii) Systems Design & Development, iii) Software Tools & Techniques, iv) Advanced Programming, v) Big Data

MRC Fellow, MSc Health Data Analytics and Machine Learning Programme, EBS, SPH, IMPERIAL

Key tasks:
Translational Data Science II module — (Jan-April 2022)
3×45m / week
Project supervisor (experiential learning) for 12 M.Sc students on: *In-depth phenotyping of early vs late asthma cases in UK BioBank*

Preprints

[1] **Triantafyllidis, C.P.**, *Mathematical programming and graph neural networks illuminate functional heterogeneity of pathways in disease*, bioRxiv, 2024. doi: 10.1101/2024.12.28.630070. URL https://doi.org/10.1101/2024.12.28.630070.

[2] Anna Tselioudis Garmendia, Ioannis Gkouzionis, **Triantafyllidis, C.P.**, Vasileios Dimakopoulos, Sotirios Liliopoulos, Marc H. Chadeau, *Towards personalised early prediction of Intra-Operative Hypotension following anesthesia using Deep Learning and phenotypic heterogeneity*, https://www.medrxiv.org/content/10.1101/2023.01.20.23284432v1, 2023.

[3] 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, 2021.

Publications

[1] **C.P. Triantafyllidis**, Barberis, A., Hartley, F., Cuervo, A.M., Gjerga, E., Charlton, P., Van Bijsterveldt, L., Rodriguez, J.S., Buffa, F.M., *A machine learning and optimization approach to uncover TP53 regulatory patterns*, iScience Cell Press (2023), doi: https://doi.org/10.1016/ j.isci.2023.108291.

[2] **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

[3] **C.P. Triantafyllidis** and L.G. Papageorgiou, *An integrated platform for intuitive mathematical programming modeling using LaTeX*, PeerJ Computer Science, 4e:1612018, 2018. DOI: 10.7717/peerj-cs.161

[4] **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

[5] 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

[6] Xiaonan Wang, Koen H. van Dam, **C.P. Triantafyllidis** , Rembrandt H.E.M. Koppelaar,d, 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

[7] 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

[8] 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

[9] 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

[10] 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^{th} European Symposium on Computer Aided Process Engineering – ESCAPE 27 October 1^{st} - 5^{th}, Barcelona, Spain 2017.

[11] 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.

[12] 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.

[13] 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^{th} European Symposium on Computer Aided Process Engineering - ESCAPE 26, 2016.

[14] **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

[15] 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

[16] K. Paparrizos, N. Samaras, and **C.P. Triantafyllidis**, *A computational study of exterior point simplex algorithm variations*, Spetses, Greece, 19-21 June 2008, 20^{th} Conference of the Hellenic Operational Research Society (EEEE), pp. 777-785.