# Spyridon Pougkakiotis

CONTACT
INFORMATION

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INTERESTS    Optimization, Operational Research, Computational Mathematics, Mathematical Programming

EXPERIENCE

### Postdoctoral Research Associate

*Yale University, Department of Electrical Engineering*                    April 2022 – present
Research position on stochastic and nonlinear optimization hosted by Dr. Dionysios Kalogerias

### Research Assistant

*University of Edinburgh, School of Mathematics*                    September 2020 – June 2021
Reserach for a Google-funded project with name "Fast $(1+x)$-order methods for linear programming"

### Teaching

*University Of Edinburgh, School of Mathematics*                    September 2017 – August 2020
"Mathematics Revision Course" (PG)

### Tutoring

*University Of Edinburgh, School of Mathematics*                    September 2018 – August 2021
"Large-Scale Optimization for Data Science" (PG)

*University Of Edinburgh, School of Mathematics*                    September 2018 – August 2020
"Fundamentals of Optimization" (UG-PG)

*University Of Edinburgh, School of Engineering*                    September 2018 – August 2019
"Engineering Mathematics" (UG-PG)

*University Of Edinburgh, School of Mathematics*                    September 2017 – August 2020
"Optimization Methods in Finance" (PG)

*University Of Edinburgh, School of Mathematics*                    September 2017 – August 2020
"Fundamentals of Operational Research" (UG-PG)

*University Of Edinburgh, School of Mathematics*                    September 2017 – August 2018
"Linear Programming, Modelling and Solution" (UG)

### Referee for Scientific Journals

| | |
|---|---|
| *Journal of Optimization Theory and Applications* | July 2022 – present |
| *Computational and Applied Mathematics* | May 2022 – present |
| *SIAM Journal on Matrix Analysis and Applications* | September 2021 – present |
| *Numerical Algorithms* | September 2019 – present |
| *SIAM Journal on Optimization* | April 2019 – present |
| *Optimization Methods and Software* | May 2018 – present |
| *Computational Optimization and Applications* | February 2018 – present |
| *Mathematical Programming* | December 2017 – present |

EDUCATION

**University Of Edinburgh**, Edinburgh, Scotland, UK. September 2017 – December 2021
PhD in Operational and Operational Research (Supervisor: Jacek Gondzio)

**University Of Edinburgh**, Edinburgh, Scotland, UK. September 2016 -August 2017
MSc in Operational Research with Computational Optimization (82.4/100, Distinction)

**University Of Athens**, Athens, Greece. September 2012 - July 2016
4-Year BSc in Informatics And Telecommunications (9.09/10, Top 1%)

AWARDS AND
FELLOWSHIPS

- Principal's Career Development Scholarship - PhD funding   The University of Edinburgh
  Sep. 2017-Jan 2021
- A. G. Leventis Scholarship - Educational Grant   A. G. Leventis Foundation
  Sep. 2017-Dec. 2020
- Highly Skilled Workforce Scholarship - Full MSc Funding   The University Of Edinburgh
  June 2016

TECHNICAL SKILLS   **Programming and Scripting Languages**: C, Julia, Shell Scripting
**Operating Systems**: Linux, Windows
**Tools**: MATLAB, LaTeX

PUBLICATIONS

### Journal Papers

- J. Gondzio, S. Pougkakiotis, J. W. Pearson, "General-purpose preconditioning for regularized interior point methods", *arXiv preprint arXiv:2107.06822, 2022* (Accepted at Computational Optimization and Applications)
  **DOI:** https://doi.org/10.48550/arXiv.2107.06822

- V. De Simone, D. di Serafino, J. Gondzio, S. Pougkakiotis, M. Viola, "Sparse Approximations with Interior Point Methods", *arXiv preprint arXiv:2102.13608, 2021 (Accepted at SIAM Review)*
  **DOI:** https://doi.org/10.48550/arXiv.2102.13608
- S. Pougkakiotis, J. Gondzio, "An Interior Point-Proximal Method of Multipliers for Linear Positive Semi-Definite Programming", *Journal of Optimization Theory and Applications, 192(1), 97–129, 2022*
  **DOI:** https://doi.org/10.1007/s10957-021-01954-4
- L. Bergamaschi, J. Gondzio, Á. Martínez, J. W. Pearson, S. Pougkakiotis, "A New Preconditioning Approach for an Interior Point-Proximal Method of Multipliers for Linear and Convex Quadratic Programming", *Numerical Linear Algebra with Applications, e2361, 2021*
  **DOI:** https://doi.org/10.1002/nla.2361
- S. Pougkakiotis, J. Gondzio, "An Interior Point-Proximal Method of Multipliers for Convex Quadratic Programming", *Computational Optimization and Applications, 78(2), 307–351, 2021*
  **DOI:** https://doi.org/10.1007/s10589-020-00240-9
- S. Pougkakiotis, J. W. Pearson, S. Leveque, J. Gondzio, "Fast Solution Methods for Convex Quadratic Optimization of Fractional Differential Equations", *SIAM Journal on Matrix Analysis and Applications, 41(3), 1443–1476, 2020*
  **DOI:** https://doi.org/10.1137/19M128288X
- S. Pougkakiotis, J. Gondzio, "Dynamic Non-Diagonal Regularization in Interior Point Methods for Linear and Convex Quadratic Programming", *Journal of Optimization Theory and Applications 181(3), 905–945, 2019*
  **DOI:** https://doi.org/10.1007/s10957-019-01491-1

## Conference Papers

- P. Bouboulis, S. Pougkakiotis, S. Theodoridis, "Efficient KLMS and KRLS Algorithms: A Random Fourier Feature Perspective ", *Statistical Signal Processing Workshop (SSP), 2016 IEEE*
  **DOI:** https://doi.org/10.1109/SSP.2016.7551811

## Preprints

- D. S. Kalogerias, S. Pougkakiotis "Risk-constrained nonconvex functional resource allocation has zero duality gap", *arXiv preprint arXiv:2206.11948v2, 2022*
  **DOI:** https://doi.org/10.48550/arXiv.2206.11948
- S. Pougkakiotis, D. S. Kalogerias, "A zeroth-order proximal stochastic gradient method for weakly convex stochastic optimization", *arXiv preprint arXiv:2205.01633, 2022*
  **DOI:** https://doi.org/10.48550/arXiv.2205.01633
- S. Pougkakiotis, J. Gondzio, "A semismooth Newton-proximal method of multipliers for $\ell_1$-regularized convex quadratic programming", *arXiv preprint arXiv:2201.10211, 2022*
  **DOI:** https://doi.org/10.48550/arXiv.2201.10211

## In Preparation

- S. Evmorfos, S. Pougkakiotis, K. Nikolakakis, D. S. Kalogerias, "Solving constrained classification via fitting using relabeling"

- S. Pougkakiotis, D. S. Kalogerias, J. Gondzio, "An active set method for convex quadratic piecewise linear optimization"

- H. Hashmi, S. Pougkakiotis, D. S. Kalogerias, "Model-Free beamforming optimization for fully passive IRS-aided communications via stage-less reinforcement learning"

### Invited Speaker

- "USNA Optimization and Operational Research Conference"                                    USNA
  2–4 June, 2021
- "Communications in Numerical Linear Algebra"                                    Independent
  26 April, 2021
- "3rd IMA and ORS Conference on Mathematics of Operational Research"        The OR Society
  20–23 April, 2021
- "Workshop on Fast Solvers for Fractional Diffusion Problems"             Univesity of Strathclyde
  2 April, 2020
- "Numerical Linear Algebra for PDEs and Large Scale Optimization"            University of Padova
  17–18 February, 2020
- "Advances in Linear Algebra and Huge-Scale Optimization"             University of Edinburgh
  1–2 July, 2019
- "Strathclyde-Edinburgh Seminar"                                    University of Strathclyde
  31 January, 2019

### Contributing Speaker

- "18th Workshop on Advances in Continuous Optimization"                                    ENAC
  7–9 July, 2021
- "6th International Conference on Continuous Optimization"        Technical University of Berlin
  3–8 August, 2019
- "17th Workshop on Advances in Continuous Optimization"             University of Strathclyde
  28–29 June, 2019
- "23rd International Symposium on Mathematical Programming"            University of Bordeaux
  1–6 July, 2018
- "6th IMA Conference on NLA and Optimization"                  University of Birmingham
  27–29 June, 2018

### Attendee

- "LMS-EPSRC Durham Symposium on Model Order Reduction"             University of Durham
  7-17 August, 2017

References         Available upon request.