Kostas Papafitsoros

Personal Data

Date of birth:	23rd of November 1984
Nationality:	Greek
Mail address:	Queen Mary University of London, School of Mathematical Sciences, Mile End Rd, E1 4NS, UK
Email:	k.papafitsoros@qmul.ac.uk
Webpage:	http://kostaspapafitsoros.weebly.com

Academic Positions

2022-today – **Lecturer in Mathematical Data Science (Assistant Professor)**,
School of Mathematical Sciences, Queen Mary University of London.

2017-2022 – **Research Scientist**, Group: Nonsmooth Variational Problems and Operator Equations,
Weierstrass Institute for Applied Analysis and Stochastics, Berlin.

2015-2017 – **Alexander von Humboldt Postdoctoral Fellow**,
April 2016 – August 2017: Weierstrass Institute for Applied Analysis and Stochastics, Berlin.
September 2015 – March 2016: Institute for Mathematics, Humboldt University, Berlin.

2014-2015 – **EPSRC Doctoral Prize Fellow**,
Department of Applied Mathematics and Theoretical Physics, University of Cambridge.

Education

2010-2014 – **Ph.D. in Mathematics**, Cambridge Centre for Analysis (CCA), University of Cambridge.
Thesis title: "Novel higher order regularisation methods for image reconstruction".
Supervisor: Professor Carola-Bibiane Schönlieb.
Thesis examiners: Professor Antonin Chambolle, Dr. Anders Hansen.

2009-2010 – **M.Sc. in Mathematical Modelling & Scientific Computing**, University of Oxford.

2007-2009 – **M.Sc. in Pure Mathematics**, University of Athens.

2002-2007 – **Diploma in Applied Mathematics and Physics (5 year degree)**, National
Technical University of Athens.

Scholarships / Awards

2023 – Queen Mary University of London Impact Fund: *Engaging citizens in responsible tourism: Integrating wildlife viewing with artificial intelligence for a novel user experience* (£18,290)

2023 – QJMAM Fund for Applied Mathematics, Institute of Mathematics & its Applications, UK (£900)

2019 – Best Poster Award (1st place), Synergistic Reconstruction Symposium, Chester, UK.

2015 – *SET for Britain* competition. Selected for poster presentation at Portcullis House, London, UK,
March 2015. Joint work with Luca Calatroni and Evangelos Papoutsellis.

2014 – EPSRC Doctoral Prize Award.
– First prize in "People" category of EPSRC science photo competition.

2011-2014	– Ph.D. funding from DAMTP and DPMMS.
2010-2014	– EPSRC Ph.D. Scholarship (fees only).
2012	– Smith-Knight/Rayleigh-Knight Essay Prize, awarded for an essay on mathematics and its applications to 2nd year Ph.D. students at Cambridge, group 3 of 5. Submitted after 8 months of research opposed to 15 months for most students due to CCA course structure. – Travel grant from St Edmunds college.
2010-2011	– Eugenides Foundation Scholarship.
2007	– Erasmus Scholarship 2007, Charles University, Prague, Czech Republic.
2003-2005	– Greek State Scholarship Foundation Award for high performance during the academic years 2002-3, 2003-4, 2004-5.
2002	– Greek State Scholarship Foundation Award, for achieving 2nd rank among successful candidates of the Department of Applied Mathematics and Physics in 2002.

PUBLICATIONS

Preprints

[36] **Machine learning for quantitative MR image reconstruction**
Andreas Kofler, Felix Frederik Zimmermann, Kostas Papafitsoros, submitted, (2024)
https://arxiv.org/abs/2402.19396

[35] **A descent algorithm for the optimal control of ReLU neural network informed PDEs based on approximate directional derivatives**,
Guozhi Dong, Michael Hintermüller, Kostas Papafitsoros, submitted, (2022)
https://arxiv.org/abs/2210.07900

[34] **First-order conditions for the optimal control of learning-informed nonsmooth PDEs**,
Guozhi Dong, Michael Hintermüller, Kostas Papafitsoros, Kathrin Völkner, submitted, (2022)
https://arxiv.org/abs/2206.00297

[33] **SeaTurtleID: A novel long-span dataset highlighting the importance of timestamps in wildlife re-identification**,
Kostas Papafitsoros, Lukáš Adam, Vojtech Cermak, Lukáš Picek, (2022)
https://arxiv.org/abs/2211.10307

Publications in Journals

[32] **Learning Regularization Parameter-Maps for Variational Image Reconstruction using Deep Neural Networks and Algorithm Unrolling**
Andreas Kofler, Fabian Altekrüger, Fatima Antarou Ba, Christoph Kolbitsch, Evangelos Papoutsellis, David Schote, Clemens Sirotenko, Felix Frederik Zimmermann, Kostas Papafitsoros,
SIAM Journal on Imaging Sciences (to appear), (2023)
https://arxiv.org/abs/2301.05888

[31] **A social media-based framework for quantifying temporal changes to wildlife viewing intensity**
Kostas Papafitsoros, Lukáš Adam, Gail Schofield,
Ecological Modelling, 476, 110223, (2023)
https://doi.org/10.1016/j.ecolmodel.2022.110223

[30] **Bilevel training schemes in imaging for total-variation-type functionals with convex integrands**,
Valerio Pagliari, Kostas Papafitsoros, Bogdan Raita, Andreas Vikelis,
SIAM Journal on Imaging Sciences, 15(4), 1690-1728, (2022)
https://doi.org/10.1137/21M1467328

[29] **Dualization and automatic distributed parameter selection of total generalized variation via bilevel optimization**,
Michael Hintermüller, Kostas Papafitsoros, Carlos Rautenberg, Hongpeng Sun,

Numerical Functional Analysis and Optimization, (2022)
https://doi.org/10.1080/01630563.2022.20698129

[28] **Optimization with learning-informed differential equation constraints and its applications**,
Guozhi Dong, Michael Hintermüller, Kostas Papafitsoros,
ESAIM: Control, Optimisation and Calculus of Variations, vol. 28, (2022)
https://doi.org/10.1051/cocv/2021100

[27] **Variable step mollifiers and applications**,
Michael Hintermüller, Kostas Papafitsoros, Carlos Rautenberg,
Integral Equations and Operator Theory, vol. 92, no. 53, (2020)
https://doi.org/10.1007/s00020-020-02608-2

[26] **Patch-wise adaptive weights smoothing**,
Jörg Polzehl, Kostas Papafitsoros, Karsten Tabelow,
Journal of Statistical Software, vol. 95, no. 6, 1-27, (2020)
https://doi.org/10.18637/jss.v095.i06

[25] **Generating structure nonsmooth priors and associated primal-dual methods**,
Michael Hintermüller, Kostas Papafitsoros,
Handbook of Numerical Analysis, vol. 20, 437-502, (2019)
https://doi.org/10.1016/bs.hna.2019.08.001

[24] **Analysis and automatic parameter selection of a variational model for mixed Gaussian and Salt & Pepper noise removal**,
Luca Calatroni, Kostas Papafitsoros,
Inverse Problems 35(11), 114001, (2019)
https://iopscience.iop.org/article/10.1088/1361-6420/ab291a

[23] **Quantitative magnetic resonance imaging: From fingerprinting to integrated physics-based models**,
Guozhi Dong, Michael Hintermüller, Kostas Papafitsoros,
SIAM Journal on Imaging Sciences, 12(2), 927-971, (2019)
https://doi.org/10.1137/18M1222211

[22] **A function space framework for structural total variation regularization with applications in inverse problems**,
Michael Hintermüller, Martin Holler, Kostas Papafitsoros,
Inverse Problems 34, 064002, (2018)
http://dx.doi.org/10.1088/1361-6420/aab586

[21] **Analytical aspects of spatially adapted total variation regularisation**,
Michael Hintermüller, Kostas Papafitsoros, Carlos Rautenberg,
Journal of Mathematical Analysis and Applications, vol. 454, no. 2, 891-935, (2017)
http://dx.doi.org/10.1016/j.jmaa.2017.05.025

[20] **Infimal convolution regularisation functionals of BV and $\mathbf{L}^p$ spaces. Part I: The finite p case**,
Martin Burger, Kostas Papafitsoros, Evangelos Papoutsellis, Carola Schönlieb,
Journal of Mathematical Imaging and Vision, vol. 55, no. 3, 343-369, (2016)
http://dx.doi.org/10.1007/s10851-015-0624-6

[19] **Analysis and application of a non-local Hessian**,
Jan Lellmann, Kostas Papafitsoros, Carola Schönlieb, Daniel Spector,
SIAM Journal on Imaging Sciences, 8(4), 2162-2202, (2015)
http://dx.doi.org/10.1137/140993818

[18] **A study of the one dimensional total generalised variation regularisation problem**,
Kostas Papafitsoros, Kristian Bredies,
Inverse Problems and Imaging, vol. 9, no. 2, 511-550, (2015)
http://dx.doi.org/10.3934/ipi.2015.9.511

[17] **A combined first and second order variational approach for image reconstruction**,
Kostas Papafitsoros, Carola Schönlieb,
Journal of Mathematical Imaging and Vision, vol. 48, no. 2, 308-338, (2014)
http://dx.doi.org/10.1007/s10851-013-0445-4

[16] **Combined first and second order total variation inpainting using split Bregman**,
Kostas Papafitsoros, Carola Schönlieb, Bati Sengul,
Image Processing Online, 112-136, (2013)
http://dx.doi.org/10.5201/ipol.2013.40

Publications in Refereed Conference Proceedings

[15] **WildlifeDatasets: An open-source toolkit for animal re-identification**
Vojtech Cermak, Lukáš Picek, Lukáš Adam, Kostas Papafitsoros,
IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), (2024)
https://arxiv.org/abs/2311.09118

[14] **SeaTurtleID2022: A long-span dataset for reliable sea turtle re-identification**
Lukáš Adam, Vojtech Cermak, Kostas Papafitsoros, Lukáš Picek,
IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), (2024)
https://arxiv.org/abs/2311.05524

[13] **Unrolled three-operator splitting for parameter-map learning in Low Dose X-ray CT reconstruction,**
Andreas Kofler, Clemens Sirotenko, Felix Zimmermann, David Schote, Christoph Kolbitsch, Fatima Antarou Ba,
Fabian Altekrüger, Evangelos Papoutsellis, Kostas Papafitsoros,
Fully 3D Image Reconstruction in Radiology and Nuclear Medicine (Fully3D 2023), (2023)
https://arxiv.org/abs/2304.08350

[12] **CNN-based estimation of spatio-temporal regularization parameter-maps for TV-reconstruction in dynamic cardiac MRI,**
Andreas Kofler, Clemens Sirotenko, Felix Zimmermann, David Schote, Christoph Kolbitsch, Fatima Antarou Ba,
Fabian Altekrüger, Evangelos Papoutsellis, Kostas Papafitsoros,
International Society for Magnetic Resonance in Medicine ISMRM 2023, (2023)
http://submissions.mirasmart.com/ISMRM2023/ViewSubmissionPublic.aspx?sei=2j5icHQBC

[11] **Infimal convolution regularisation functionals of BV and L^p spaces. The case $p = \infty$,**
Martin Burger, Kostas Papafitsoros, Evangelos Papoutsellis, Carola Schönlieb,
System Modeling and Optimization, CSMO 2015, IFIP Advances in Information and Communication Technology,
vol. 494, 169-179, (2016)
http://dx.doi.org/10.1007/978-3-319-55795-3_15

[10] **Asymptotic behaviour of total generalised variation**,
Kostas Papafitsoros, Tuomo Valkonen,
Scale Space and Variational Methods in Computer Vision, Lecture Notes in Computer Science,
vol. 9087, 702-714, (2015)
http://dx.doi.org/10.1007/978-3-319-18461-6_56

Publications in Journals (Environmental Conservation Modelling)

[9] **Underreported in-water behaviours of the loggerhead sea turtle: Foraging on sea cucumbers**,
Kostas Papafitsoros
MedTurtle Bulletin 3, (2023)
bioRxiv: https://doi.org/10.1101/2022.08.26.505133

[8] **Underreported in-water behaviours of the loggerhead sea turtle: Getting buried in the sand**,
Kostas Papafitsoros,
MedTurtle Bulletin 2, (2022)
bioRxiv: https://doi.org/10.1101/2022.08.26.505133

[7] **Social media mining and photo-identification detects the shift of long-term seasonal foraging habitat for a juvenile loggerhead sea turtle**,
Kostas Papafitsoros,
MedTurtle Bulletin 1, (2022)
bioRxiv: https://doi.org/10.1101/2022.02.28.482324

[6] **More aggressive sea turtles win fights over foraging resources independent of body size and**

site occupancy,
Gail Schofield, Kostas Papafitsoros, Chloe Chapman, Akanksha Shah, Lucy Westover, Liam Dickson,
Kostas Katselidis,
Animal behaviour, 190, 209-219, (2022)
https://doi.org/10.1016/j.anbehav.2022.05.006

[5] **Photo-identification confirms polyandry in loggerhead sea turtles**,
Kostas Papafitsoros, Charalampos Dimitriadis, Antonios Mazaris, Gail Schofield,
Marine Ecology, 43(2), e12696, (2022)
https://doi.org/10.1111/maec.12696

[4] **Social media reveals consistently disproportionate tourism pressure on a threatened marine vertebrate**,
Kostas Papafitsoros, Aliki Panagopoulou, Gail Schofield,
Animal Conservation, 24(4), 568-579, (2021)
https://doi.org/10.1111/acv.12656

[3] **Long-term photo-id and satellite tracking reveal sex-biased survival linked to movements in an endangered species**,
Gail Schofield, Marcel Klaassen, Kostas Papafitsoros, Martin Lilley, Kostas Katselidis, Graeme Hays,
Ecology, vol. 101, no. 7, e3027, (2020)
https://doi.org/10.1002/ecy.3027

[2] **Complex movement patterns by loggerhead sea turtles at foraging and wintering sites revealed by Fastloc-GPS**,
Antoine Dujon, Gail Schofield, Rebecca Lester, Kostas Papafitsoros, Graeme Hays,
Marine Ecology, 39, Issue 1, (2018)
https://doi.org/10.1111/maec.12489

[1] **Aerial and underwater surveys reveal temporal variation in cleaning-station use by sea turtles at a temperate breeding area**,
Gail Schofield, Kostas Papafitsoros, Rebecca Haughey, Kostas Katselidis,
Marine Ecology Progress Series, 575:153-164, (2017)
https://doi.org/10.3354/meps12193

Funded Research Projects

2022-2025   **Robust Multilevel Training of Artificial Neural Networks**
Awarding body: MATH$^+$ – Berlin Mathematics Research Center.
P.I.: Michael Hintermüller, Kostas Papafitsoros, Carsten Gräser.
Role & activities: co-P.I.

2019-2021   **Direct Reconstruction of Biophysical Parameters Using Dictionary Learning and Robust Regularization**,
https://mathplus.de/emerging-field-3-model-based-imaging/ef3-5
Awarding body: MATH$^+$ – Berlin Mathematics Research Center.
P.I.: Michael Hintermüller, Tobias Schäffter.
Staff: Guozhi Dong.
Role & activities: Research associate.

2017-2018   **Advanced Magnetic Resonance Imaging: Fingerprinting and Geometric Quantification**,
http://wias-berlin.de/people/papafitsoros/MRF
Awarding body: Einstein Center for Mathematics Berlin, MATHEON.
P.I.: Michael Hintermüller.
Staff: Guozhi Dong.
Role & activities: Research associate and coauthor of grant proposal.

Theses / Dissertations / Essays

[6] **Ph.D. Dissertation:** *Novel Higher Order Regularisation Methods for Image Reconstruction*.
Advisor: Carola Schönlieb, University of Cambridge, UK, August 2014.
https://www.repository.cam.ac.uk/handle/1810/246692

[5] **CCA Long Mini Project:** *Higher Order Regularisation for Total Variation Inpainting*.
Advisor: Carola Schönlieb , University of Cambridge, UK, June 2011.

[4] **CCA Short Mini Project:** *Fractal Measures*.
Advisor: James Norris, University of Cambridge, UK, January 2011.

[3] **M.Sc. Dissertation:** *How Fast are Nonsymmetric Matrix Iterations? A 2010 Update*.
Advisors: Andrew Wathen and Martin Stoll, University of Oxford, UK, September 2010.

[2] **M.Sc. Thesis:** *Ramsey Sets and Canonical Partition Theorems*.
Advisor: Athanasios Tsarpalias, University of Athens, Greece, December 2009.

[1] **Diploma Thesis:** *Pointwise Compact Subsets of the 1st Baire Class*.
Advisors: Spyros Argyros and Vassilis Kanellopoulos, National Technical University of Athens, Greece,
October 2007.

Main Talks

2023
- Birkbeck, University of London, UK, December 2023. *Invited seminar talk.*
- Kick-off event of the Centre for Data Science, Statistics and Probability, Queen Mary University of London, UK, November 2023. *Invited seminar talk.*
- Applied Inverse Problems Conference, Göttingen, Germany, September 2023. *Invited conference talk.*
- Central South University, Changsha, China, August 2023. *Invited seminar talk.*
- Workshop on Recent Advances in Iterative Reconstruction, University College London, UK, May 2023. *Invited conference talk.*
- University of Bath, UK, April 2023. *Invited seminar talk.*
- Digital Environment Research Institute, UK, March 2023. *Invited seminar talk.*
- Escuela Politécnica Nacional, Quito, Ecuador, March 2023. *Invited seminar talk.*
- Queen Mary University of London, UK, March 2023. *Invited colloquium talk.*
- University of Florida, USA, January 2023, *Invited seminar talk.*

2022
- Queen Mary University of London, UK, November 2022. *Invited seminar talk.*
- University of Potsdam, Germany, July 2022. *Invited seminar talk.*
- Second Congress of Greek Mathematicians SCGM-2022, Athens, Greece, July 2022. *Invited conference talk.*
- Institute of Applied and Computational Mathematics (IACM), Heraklion, Crete, Greece, May 2022. *Invited colloquium talk.*
- SIAM Conference on Imaging Sciences, Berlin, Germany, March 2022. *Invited conference talk.*

2021
- School of Applied Mathematics and Physics, National Technical University of Athens, Athens, Greece, December 2021. *Invited seminar talk.*
- IFIP TC7 Conference, Quito, Ecuador, September 2021. *Conference talk and organization of a minisymposium.*
- SIAM Conference on Optimization, Spokane, Washington, USA, July 2021. *Invited conference talk.*
- MATH+ Spotlight seminar talk, May 2021.
- Weierstrass Institute, Berlin, WIAS Research Group 6 Seminar, March 2021. *Invited seminar talk.*
- Weierstrass Institute Scientific Advisory Board Meeting, March 2021. *Invited talk.*
- University of Graz, Austria, January 2021. *Invited seminar talk.*

2020
- Algorithmy 2020, Podbanske, Slovakia, September 2020. *Invited conference talk.*
- George Mason University, Virginia, USA, July 2020. *Invited seminar talk.* [Postponed, Covid-19]
- SIAM Conference on Imaging Sciences, Toronto, Canada, July 2020. *Invited conference talk.*

2019 – Workshop on PDE Constrained Optimization under Uncertainty and Mean Field Games. Weierstrass Institute, Berlin, Germany, January 2020. *Contributed talk*.
– Southern University of Science and Technology, Shenzhen, China, January 2020. *Invited seminar talk*.
– Shenzhen MSU-BIT University, Shenzhen, China, January 2020. *Invited seminar talk*.

2019 – Synergistic Reconstruction Symposium, Chester, UK, November 2019. *Invited conference talk*.
– International Conference on Continuous Optimization, ICCOPT 2019, Berlin, Germany, August 2019. *Conference talk and organisation of a minisymposium*.
– Applied Inverse Problems Conference, Grenoble, France, July 2019. *Invited conference talk*.
– Institut Henri Poincaré, Paris, France, March 2019. *Invited seminar talk*.
– WIAS days 2019, Berlin, Germany, March 2019. *Contributed talk*.

2018 – VI Latin American Workshop on Optimization and Control, Quito, Ecuador, September 2018. *Invited conference talk*.
– SIAM Conference on Imaging Sciences, Bologna, Italy, June 2018. *Invited conference talk*.
– WIAS days 2018, Berlin, Germany, February 2018. *Contributed talk*.

2017 – Applied Inverse Problems Conference, Hangzhou, China, May 2017. *Invited conference talk*.
– GAMM annual meeting, Weimar, Germany, March 2017. *Contributed talk*.
– WIAS days 2017, Berlin, Germany, February 2017. *Contributed talk*.

2016 – SFB workshop on Imaging with Modulated/Incomplete data, Technical University of Graz, Austria, September 2016. *Contributed talk*.
– SIAM Conference on Imaging Sciences, Albuquerque, USA, May 2016. *Conference talk and organisation of a minisymposium*.
– Weierstrass Institute, Berlin, Germany, May 2016. *Research seminar talk*.

2015 – SIAM Conference on Analysis of Partial Differential Equations, Scottsdale, Arizona, USA, December 2015. *Invited conference talk*.
– Max Planck Institute for Dynamics of Complex Technical Systems, Magdeburg, Germany, November 2015. *Invited seminar talk*.
– Humboldt Universität, Berlin, Germany, November 2015. *Research seminar talk*.
– Applied Inverse Problems Conference, Helsinki, Finland, May 2015. *Invited conference talk*.

2014 – Humboldt Universität, Berlin, Germany, December 2014. *Invited seminar talk*.
– RICAM, Linz, Austria, July 2014. *Invited seminar talk*.
– SIAM Conference on Imaging Sciences, Hong Kong, May 2014. *Invited conference talk*.

2013 – IFIP TC 7 Conference, Klagenfurt, Austria, September 2013. *Invited conference talk*.
– University of Graz, Austria, April 2013. *Invited seminar talk*.
– University of Oxford, OCCAM seminar, March 2013. *Invited seminar talk*.
– University of Cambridge, C.A.K.E. seminar, February 2013. *Research seminar talk*.

2012 – SIAM Conference on Imaging Sciences, Philadelphia, USA, May 2012. *Invited conference talk*.
– University of Bristol, Young Researchers in Mathematics, April 2012. *Conference talk*.
– University of Cambridge, 1st CCA-MASDOC Conference, March 2012. *Conference talk*.

2011 – University of Cambridge, CCA open day, November 2011. *Research talk*.
– University of Cambridge, C.A.K.E. seminar, November 2011. *Research seminar talk*.

━━━━━━━ MAJOR CONFERENCES ATTENDED (where no presentation was given)

2017 – Workshop on Variational Methods, new Optimisation Techniques and new Fast Numerical Algorithms, Isaac Newton Institute, Cambridge, UK, September 2017.
2016 – BMS Summer School on Mathematical and Numerical Methods in Image Processing, Berlin, July-August 2016.
2015 – Workshop on Variational Methods for Dynamic Inverse Problems and Imaging, University of Münster, Germany, September 2015.

2013 – Oxbridge PDE days, University of Oxford, March 2013.

– Workshop on Convex Relaxation Methods for Geometric Problems in Scientific Computing, IPAM, UCLA, February 2013.

2012 – Young Researchers' Workshop on Statistics, Learning and Variational Methods in Imaging, University of Cambridge, September 2012.

– Mathematics and Image Analysis Conference MIA 2012, Institut Henri Poincaré, January 2012.

2011 – Summer Course on Weak convergence, Young measures and Quasiconvexity, by Jan Kristensen. Summer Course on Quantitative geometric and functional inequalities, by Nicola Fusco, University of Jyväskylä, Finland, August 2011.

– ERC-Summer School on Calculus of Variations, Continuum Mechanics and Geometric Inequalities, Ischia, Italy, June 2011.

– Young Researchers in Mathematics 2011, University of Warwick, April 2011.

– London Mathematical Society Lectures 2011, eight-lecture minicourse at graduate level by Emmanuel Candès on Compressed Sensing, University of Cambridge, March 2011.

POSTER PRESENTATIONS

2022 – Weierstrass Institute Audit, Berlin, Germany, September 2022.

2020 – Workshop on Efficient Algorithms in Data Science, Learning and Computational Physics, TSIMF, Sanya, China, January 2020.

2019 – Synergistic Reconstruction Symposium, Chester, UK, November 2019. Best Poster Award.

2018 – Mathematics and Image Analysis MIA 2018, Berlin, Germany, January 2018.

2016 – Imaging, Vision and Learning based on Optimization and PDEs, Bergen, Norway, September 2016.

2015 – Scale Space and Variational Methods in Computer Vision Conference, Lege Cap Ferret, France, June 2015.

– SET for Britain competition, London, UK, March 2015. Joint work with Luca Calatroni and Evangelos Papoutsellis.

2014 – Workshop on Variational Methods in Imaging, RICAM, Linz, Austria, October 2014.

– LMS meeting on Sparse Regularisation for Inverse Problems, Isaac Newton Institute, Cambridge, February 2014.

– CMS Mathematical Sciences Showcase, University of Cambridge, January 2014.

JOURNAL REVIEWING ACTIVITIES

- Reviewer for the following journals:

- SIAM Journal on Imaging Sciences
- SIAM Journal on Scientific Computing
- SIAM/ASA Journal on Uncertainty Quantification
- Inverse Problems
- Journal of Mathematical Imaging and Vision
- International Journal of Computer Vision
- European Journal of Applied Mathematics
- CSIAM Transactions on Applied Mathematics
- Optimization Methods and Software
- Foundations of Data Science
- La Matematica
- Advances in Continuous and Discrete Models

- Applied Mathematics and Optimization
- Advances in Computational Mathematics
- Inverse Problems and Imaging
- IEEE Transactions on Image Processing
- IEEE Transactions on Pattern Analysis and Machine Intelligence
- Journal of Computational and Applied Mathematics
- Journal of Visual Communication and Image Representation
- Journal of Inverse and ill-posed Problems
- Computer Vision and Image Understanding
- Communications on Pure and Applied Analysis

Reviewing Panels

- Member of QMUL Impact Acceleration Fund reviewing panel (2023).
- Member of the Program Committee of 9th International Conference on Scale Space and Variational Methods in Computer Vision, SSVM 2023.
- Research proposal reviewer for the Dutch Research Council (NWO), 2022.

PhD Theses Commitees

- Reviewer for the PhD thesis of David Villacis, Escuela Politécnica Nacional, Quito, Ecuador, 2022.

Teaching

2023-2024	– *MTH6101 Introduction to Machine learning* Third year undegraduate course, Queen Mary University of London.
2022-2023	– *MTH6101 Introduction to Machine learning* Third year undegraduate course, Queen Mary University of London.
2022-2023	– *BUSM131 Masterclass in Business Analytics* IT classes, postgraduate course, Queen Mary University of London. Jointly with Guven Demirel and Linus Wunderlich.
2021	– *Classical vs. Data Driven Regularization Methods in Imaging* Online tutorial within the MATH+ Thematic Einstein Semester on "Mathematics of Imaging in Real-Word Challenges". Jointly with Andreas Kofler.
2019	– *Advanced Topics in Optimization: Mathematical Image Processing* Postgraduate course, Humboldt University of Berlin. Jointly with Michael Hintermüller.
2012-2015	– *Analysis II* Undergraduate course, teaching assistant, University of Cambridge.
2013	– *Image Processing - Variational and PDE Methods* Part III postgraduate course, teaching assistant, University of Cambridge.
2013	– *Linear Analysis* Undergraduate course, teaching assistant, University of Cambridge

Student mentoring

2022-2023	– Mentoring of Bachelor thesis of Kane Kesler, Queen Mary University of London. Thesis title: *Artificial neural network-based sea turtle re-identification*.
2022-2023	– Mentoring of Master thesis of Martin Seyferth, Humboldt University of Berlin. Thesis title: *On the staggered grid discretization of the total variation in a bilevel optimization problem for image denoising*.
2020-2021	– Mentoring of Master thesis of Kathrin Voelkner, Humboldt University of Berlin. Thesis title: *Optimal control of a class of nonsmooth semilinear elliptic PDEs*.
2019	– Mentoring of Master thesis of intern Benoit Vignaud (Claude Bernard University of Lyon). Thesis title: *Selection of the regularisation function in a weighted Huber-total variation model*
2019	– Mentoring of Master thesis of Clemens Sirotenko, Humboldt University of Berlin. Thesis title: *Optimal choice of spatially adaptive parameters in total generalized variation via bilevel optimizationwith applications to Fourier inpainting*.
2018	– Mentoring of Master thesis of Richard Young, Humboldt University of Berlin. Thesis title: *A comparison of a R-regularized Newton method and a proximal alternating linearized minimization scheme for sparse image reconstruction*.

Organisational Activities

2025	– Coorganiser of Scale Space and Variational Methods in Computer Vision, SSVM 2025, UK, May 2025.
2024	– Coorganiser together with Evangelos Papoutsellis and Andreas Kofler of a minisymposium on "Deep unrolled optimisation methods for inverse imaging problems", SIAM Conference on Imaging Sciences, Atlanta, USA, May 2024.
2023	– Coorganiser of "Statistics and Data Science" seminar, Queen Mary University of London, winter 2023-today.
2023	– Coorganiser of "Mathematical Modelling for Biology, Health and Environment" seminar, Queen Mary University of London, winter 2023-today.
2023	– Coorganiser together with Michael Hintermüller and Guozhi Dong of a minisymposium on "Recent advances in deep learning-based inverse and imaging problems", 10th International Congress on Industrial and Applied Mathematics, Tokyo, Japan, August 2023.
2023	– Coorganiser of Mathematics and Image Analysis MIA 2023 conference, Berlin, Germany, February 2023.
2022	– Coorganiser together with Lukáš Adam of a minisymposium on "Recent developments in image super-resolution", SIAM Conference on Imaging Sciences, Berlin, Germany, March 2022.
2022	– Coorganiser of Hackathon "Maths Meets Image", Berlin, Germany, March 2022.
2021-2022	– Member of "Young Academy committee" of MATH+ Thematic Einstein Semester on "Mathematics of Imaging in Real-Word Challenges", Winter term 2021-22.
2021-2022	– Coorganiser of the Berlin Oberseminar on "Optimization, Control and Inverse Problems", Spring 2021-Summer 2022.
2021	– Local coorganiser of the Kick-off workshop of MATH+ Thematic Einstein Semester on "Mathematics of Imaging in Real-Word Challenges", PTB, Berlin, October 2021.
2021	– Coorganiser together with Luca Calatroni of a minisymposium on "Bilevel optimization approaches for image and data analysis", IFIP TC7 Conference, Quito, Ecuador, September 2021.
2020	– Coorganiser together with Michael Hintermüller and Guozhi Dong of a minisymposium on "Data inferred and physics-based models in imaging", SIAM Conference on Imaging Sciences, Toronto, Canada, July 2020. [Cancelled due to COVID-19]
2020	– Coorganiser of a MATH+ workshop "Machine learning in imaging sciences: Bridging the gap between theory and practice", Berlin, Germany, May 2020. [Cancelled due to COVID-19]
2019	– Coordinator of travel grant committee, ICCOPT 2019, Berlin, Germany, August 2019.
2019	– Coorganiser together with Michael Hintermüller of a minisymposium on "Bilevel optimization in image processing", ICCOPT 2019, Berlin, Germany, August 2019.
2019	– Coorganiser of WIAS-days 2019 workshop, Berlin, March 2019.
2018	– Coorganiser together with Michael Hintermüller of a minisymposium on "Learning and adaptive approaches in image processing", SIAM Conference on Imaging Sciences, Bologna, Italy, June 2018.
2018	– Local coorganiser of Mathematics and Image Analysis MIA 2018 conference, Berlin, Germany, January 2018.
2016	– Coorganiser together with Martin Holler of a minisymposium on "Analysis and parameterisation of derivative based regularisation", SIAM Conference on Imaging Sciences, Albuquerque, USA, May 2016.
2014	– Group leader in Part III seminars, Analysis section, University of Cambridge, March 2014.
2012-2014	– Mark checker and exam invigilation, University of Cambridge, June 2012-2014.
2012	– Organiser of CCA-MASDOC joint student conference, University of Cambridge, March 2012.

Skills

Languages:	Greek (native), English (fluent), German (very good), French (basic), Spanish (basic)
Computer Skills:	Python, Matlab, R, LaTeX, Photoshop

- Internship in Astrazeneca R&D, Department of Biostatistics, Mölndal, Sweden, June-August 2006.

RESEARCH IN SEA TURTLE BIOLOGY & CONSERVATION

Grants

- **SWOT small grant 2017 ($1000):** *Studying how sea turtle foraging ecology overlaps with tourism pressure in a national park designed to protect breeding activity only: Outreach and management implications*, awarded by the Oceanic Society, www.oceanicsociety.org and SWOT, http://seaturtlestatus.org.

Presentations

- Several oral and poster presentations in International and Mediterranean Sea Turtle Symposia (ISTS), 2015-2022, for more details, see http://kostaspapafitsoros.weebly.com/sea-turtles

Editorial activities

- Editorial board member of MedTurtle Bulletin (https://alanrees.my-free.website/medturtlebulletin).

Reviewing activities

- Biology letters
- Student award judging committee (Conservation), ISTS 2022