

Sokratia Georgaka
Academic (Teaching and Research) Lecturer
Division of Informatics, Imaging & Data Sciences (L5)

Qualifications

Master of Science, Physics and Technology of Nuclear Reactors, University of Birmingham
Award Date: 10 Dec 2014

Bachelor of Science, Physics, University of Ioannina
1 Oct 2008 → 25 Feb 2013
Award Date: 19 Apr 2013

Doctor of Philosophy, Reduced Order Models for Nuclear Reactor Thermal Hydraulics, Imperial College London
Oct 2016 → Apr 2020

Employment

Lecturer in Artificial Intelligence

Academic (Teaching and Research) Lecturer
Division of Informatics, Imaging & Data Sciences (L5)
The University of Manchester
1 Aug 2024 → present

Research outputs

Multimodal Spatial Omics: From Data Acquisition to Computational Integration

Isik, E. B., Usta, Y. H., Liu, H., Riazi, M., Roach, W., Zhou, H., Rattray, M. & Georgaka, S., 18 Jan 2026, (Submitted) arXiv, p. 1-30, 30 p.

Spatial gene regulatory networks driving cell state transitions during human liver disease

Hammond, N. L., Baker, S. M., Georgaka, S., Al-Anbaki, A., Jokl, E., Simpson, K., Sanchez-Alvarez, R., Athwal, V. S., Pursell, H., Siriwardena, A. K., Spiers, H. V. M., Dixon, M. J., Bere, L. D., Jones, A. P., Haley, M. J., Couper, K. N., Bobola, N., Sharrocks, A. D., Hanley, N. A. & Rattray, M. & 1 others, Hanley, K. P., 12 Jun 2025, In: EMBO Molecular Medicine. 17, 6, p. 1452 - 1474

CellPie: a scalable spatial transcriptomics factor discovery method via joint non-negative matrix factorization

Georgaka, S., Morgans, W., Baker, S. M., Zhao, Q., Sanchez Martinez, D., Ali, A., Bristow, R., Ghafoor, M., Iqbal, M. & Rattray, M., 11 Apr 2025, In: Nucleic acids research. 53, 6, gkaf251.

Scalable Multi-Output Gaussian Processes with Stochastic Variational Inference

Jiang, X., Georgaka, S., Rattray, M. & Álvarez, M. A., 2025, In: Transactions on Machine Learning Research. 2025-June

Ouroboros: cross-linking protein expression perturbations and cancer histology imaging with generative-predictive modeling

Deshpande, S., Georgaka, S., Haley, M., Sellers, R., Minshull, J., Nallala, J., Fergie, M., Stone, N., Rajpoot, N., Baker, S. M., Iqbal, M., Couper, K., Roncaroli, F. & Minhas, F., 4 Sept 2024, (E-pub ahead of print) In: Bioinformatics (Oxford, England). 40, Supplement_2, p. ii174-ii181

Hypoxia coordinates the spatial landscape of myeloid cells within glioblastoma to affect survival

Haley, M. J., Bere, L., Minshull, J., Georgaka, S., Garcia-Martin, N., Howell, G., Coope, D. J., Roncaroli, F., King, A., Wedge, D. C., Allan, S. M., Pathmanaban, O. N., Brough, D. & Couper, K. N., 17 May 2024, In: Science Advances. 10, 20, eadj3301.

Non-parametric modelling of temporal and spatial counts data from RNA-seq experiments

Bintayyash, N., Georgaka, S., John, S. T., Ahmed, S., Boukouvalas, A., Hensman, J. & Rattray, M., 1 Nov 2021, In: Bioinformatics (Oxford, England). 37, 21, p. 3788-3795 8 p.

A hybrid reduced order method for modelling turbulent heat transfer problems

Georgaka, S., Stabile, G., Star, K., Rozza, G. & Bluck, M., 15 Aug 2020, In: *Computers & Fluids*. 208, 104615.

Parametric POD-Galerkin Model Order Reduction for Unsteady-State Heat Transfer Problems

Georgaka, S., Stabile, G., Rozza, G. & Bluck, M., Jun 2020, In: *Communications in Computational Physics*. 27, 1, p. 1-32
32 p., Vol. 27.

POD-Galerkin reduced order model for the Boussinesq approximation for buoyancy-driven enclosed flows

Star, K., Stabile, G., Georgaka, S., Belloni, F. & Rozza, G., 2019, *Building theory and applications: proceedings of M&C 2019*. American Nuclear Society, p. 2452-2461