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Employment

Visiting Postdoctoral Research Associate
Complex Systems Group,
School of Mathematical Sciences, Queen Mary University of London. 2020 - Present

Postdoctoral Research Fellow
Department of Mathematics,
Nanyang Technological University, Singapore. 2019 - 2020

Postdoctoral Research Associate
Geometry, Analysis and Theoretical Physics Group,
Max Plank Institute for Mathematics in the Sciences,
Leipzig, Germany. 2018

Visiting Postdoctoral Research Associate
Complex Systems Group,
School of Mathematical Sciences, Queen Mary University of London. 2017 - 2018

Postdoctoral Research Fellow
Wireless Systems Laboratory,
Department of Electronic Engineering, Hanyang University,
Seoul, South Korea. 2016 - 2017

Postdoctoral Research Associate
Applied Mathematics Group,
School of Mathematics, University of Bristol. 2015 - 2016

Education

Doctor of Philosophy, Mathematics/Communications Engineering,
EPSRC Centre for Doctoral Training in Communications, University of Bristol, 2011 - 2017

Thesis ***"Connectivity and centrality in dense random geometric graphs"***
Supervised by Professor Carl P. Dettmann,
external examination by Professor Vito Latora and Professor Mason A. Porter.

***MSci,* Physics** (Upper Second Class with Honours)
University of Bristol,
Bristol, United Kingdom. 2007 - 2011
Dissertation ***"Magnetic monopoles in spin ice"***.

Publications

which have been accepted, or which have appeared, or which are being prepared,

- A. P. Kartun-Giles and V. Nicosia, ***"Do fireflies prefer hyperbolic bushes?"***, in preparation, 2022.
- A. P. Kartun-Giles and Kostas Koufos, ***"Sharp transitions for path existence in the random connection model"***, in preparation, 2022.
- A. P. Kartun-Giles, Kostas Koufos, ***"Connectivity of 1d random geometric graphs"***, RSA, submitted, 2022.
- A. P. Kartun-Giles, Kostas Koufos, Dusit Nyato, Sean Lu, ***"Two-hop connectivity to the roadside in a VANET under the random connection model"***, IEEE Transactions on Vehicular Technology, Submitted, 2022.
- A. P. Kartun-Giles, Kostas Koufos, Sunwoo Kim, ***"Meta distribution of SIR in ultra-dense networks with bipartite euclidean matchings"***, IEEE International Conference on Communications, Seoul, 2022.
- A. P. Kartun-Giles and G. Bianconi, ***"Beyond the clustering coefficient: A topological analysis of node neighbourhoods in complex networks"***, Chaos, Solitons and Fractals: X, Volume 1(1), 2019.
- A. P. Kartun-Giles, M. Barthelemy and C. P. Dettmann, ***"The shape of shortest paths in random spatial networks"***, Physical Review E, Volume 100, 032315, 2019.
- A. P. Kartun-Giles, D. Krioukov, J. P. Gleeson, Y. Moreno, G. Bianconi, ***"Sparse power-law network model for reliable statistical predictions based on sampled data"***, Entropy: Special Issue on Graph and Network Entropies, Volume 20, Issue 4, 2018.
- A. P. Kartun-Giles and S. Kim, ***"Counting k-hop paths in the random connection model"***, IEEE Transactions on Wireless Communications, Volume 17, Issue 5, 2018.
- A. P. Kartun-Giles, S. Jayaprakasam and S. Kim, ***"Euclidean matchings in ultra-dense networks"***, IEEE Communications Letters, Volume 22, Issue 6, 2018.
- G. Knight, A. P. Kartun-Giles, O. Georgiou, and C. P. Dettmann, ***"Counting geodesic paths in 1D VANETs"***, IEEE Wireless Communications Letters, Volume 6, Number 1, pp. 110-113, January 2016.
- A. P. Giles, O. Georgiou, and C. P. Dettmann, ***"Betweenness centrality in dense random geometric networks",*** Proceedings of the IEEE International Conference on Communications, London, UK, 2015.
- A. P. Giles, O. Georgiou, and C. P. Dettmann, ***"Connectivity of soft random geometric graphs over annuli"***, Journal of Statistical Physics, Volume 162, Issue 4, pp 1068-1083, January 2016.

Research Funding

as principal investigator,

- EPSRC Institutional Grant, University of Bristol.
  "Random Walks on Random Geometric Networks",
  collaborative with C. P. Dettmann, M. D. Penrose, £31,500, 2015 - 2016.

Conference Organisation
as organiser and co-organiser,

- ***"Random walks on random networks"*** at the British Mathematical Colloquium 2016.
  Contributed talks inc. Nathanaël Berestycki, Márton Balzás, Mathew Penrose, and Gourab Ray.

- ***"Modelling transport infrastructure: Connected autonomous vehicles and resilience"*** under the ENCORE project based at the University of Sheffield, 2017.

- ***"Mathematics of autonomous vehicles"***, GW4 Initiator Fund, one-day meeting 2016, (applied, unfunded).

Editorial Duties

- **Editorial Board of Wireless Communications**, Journal of Frontiers in Communications, 2020-Present.

Supervision of Research Students

- **Esme Weil**, Bachelor's Thesis, University of Manchester, "O-minimal structures". Private tutor, 2022.

- **Michael Wilshere**, PhD Student University of Bristol, "1d random geometric graphs", informal advisor, 2018-2021.

Teaching Employment

- **Undergraduate group tutorials** (1st year), Mathematics undergraduate, University of Bristol, 2016

- **Statistical mechanics** (3rd year), University of Bristol, teaching assistant, 2015.

- **Engineering mathematics** (2nd year), University of Bristol, teaching assistant, 2014.

- **Private tutoring** (12 years), including A level and university students in mathematics, physics and computer science.

Conference Talks
selected,

- **Mathematical physics seminar**, University of Arizona, invited speaker *"Shape of shortest paths in random spatial networks".*, 2021.

- **Spatially Embedded Networks**, Bristol University, *"Topological analysis of node neighbourhoods in complex networks"*, 2018

- **Mathematics of Networks (MoN16)**, University of Sussex, *"Euclidean matchings in ultra-dense spatial communication networks"*, 2017

- **Spatially Embedded Networks**, Oriel College, Oxford University, *"Path counting in the random connection model"*, 2016

- **Pure mathematics seminar**, University of Bristol, *"Random geometric graphs".* 2016.

- **Cambridge Networks Day**, University of Cambridge, *"Random geometric graphs in non-convex domains"*, 2014

- **Student Conference on Complexity Science**, University of Sussex (Session chair, invited speaker, *"Random geometric graphs in non-convex domains"*, 2014.