

# Matt Duckham

## List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

79  
papers

1,819  
citations

19  
h-index

41  
g-index

96  
ext. papers

2,081  
ext. citations

2.7  
avg, IF

4.96  
L-index

| #  | Paper   | IF  | Citations |
|----|---|-----|-----------|
| 79 | Towards Indoor Navigation Under Imprecision. <i>Lecture Notes in Computer Science</i> , <b>2022</b> , 82-92   | 0.9 |           |
| 78 | A comparative analysis of trajectory similarity measures. <i>GIScience and Remote Sensing</i> , <b>2021</b> , 58, 643-662   | 2.8 | 3         |
| 77 | Qualitative-geometric Surrounds-Relations between disjoint regions. <i>International Journal of Geographical Information Science</i> , <b>2021</b> , 35, 1032-1063  | 4.1 | 3         |
| 76 | AOI-shapes: An Efficient Footprint Algorithm to Support Visualization of User-defined Urban Areas of Interest. <i>ACM Transactions on Interactive Intelligent Systems</i> , <b>2021</b> , 11, 1-32                    | 1.8 |           |
| 75 | Evaluating the impact of visualization of risk upon emergency route-planning. <i>International Journal of Geographical Information Science</i> , <b>2020</b> , 34, 1022-1050  | 4.1 | 6         |
| 74 | Solar radiation modeling with KNIME and Solar Analyst: Increasing environmental model reproducibility using scientific workflows. <i>Environmental Modelling and Software</i> , <b>2020</b> , 132, 104780             | 5.2 | 10        |
| 73 | Bridging the geospatial gap: Data about space and indigenous knowledge of place. <i>Geography Compass</i> , <b>2020</b> , 14, e12542  | 2.4 | 3         |
| 72 | Improving the reproducibility of geospatial scientific workflows: the use of geosocial media in facilitating disaster response. <i>Journal of Spatial Science</i> , <b>2019</b> , 1-18                                | 1.6 | 2         |
| 71 | Advancing the ethical use of digital data in human research: challenges and strategies to promote ethical practice. <i>Ethics and Information Technology</i> , <b>2019</b> , 21, 59-73                                | 3.7 | 14        |
| 70 | Identifying Surrounds and Engulfs Relations in Mobile and Coordinate-Free Geosensor Networks. <i>ACM Transactions on Spatial Algorithms and Systems</i> , <b>2018</b> , 4, 1-21                                       | 1.8 | 2         |
| 69 | Analytics of movement through checkpoints. <i>International Journal of Geographical Information Science</i> , <b>2018</b> , 32, 1282-1303   | 4.1 | 9         |
| 68 | The Australian approach to geospatial capabilities; positioning, earth observation, infrastructure and analytics: issues, trends and perspectives. <i>Geo-Spatial Information Science</i> , <b>2017</b> , 20, 109-125 | 3.5 | 8         |
| 67 | An efficient incremental algorithm for generating the characteristic shape of a dynamic set of points in the plane. <i>International Journal of Geographical Information Science</i> , <b>2017</b> , 31, 569-590      | 4.1 | 1         |
| 66 | A framework for models of movement in geographic space. <i>International Journal of Geographical Information Science</i> , <b>2016</b> , 30, 970-992  | 4.1 | 11        |
| 65 | Characterizing the shapes of noisy, non-uniform, and disconnected point clusters in the plane. <i>Computers, Environment and Urban Systems</i> , <b>2016</b> , 57, 48-58  | 5.9 | 9         |
| 64 | Evaluating the impact of visualization of wildfire hazard upon decision-making under uncertainty. <i>International Journal of Geographical Information Science</i> , <b>2016</b> , 30, 1377-1404                      | 4.1 | 42        |
| 63 | Decentralized detection and monitoring of convoy patterns. <i>International Journal of Geographical Information Science</i> , <b>2016</b> , 30, 993-1011  | 4.1 | 4         |

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| 62 | Indexing large geographic datasets with compact qualitative representation. <i>International Journal of Geographical Information Science</i> , <b>2016</b> , 30, 1072-1094                                     | 4.1 | 4  |
| 61 | Modeling Checkpoint-Based Movement with the Earth Mover's Distance. <i>Lecture Notes in Computer Science</i> , <b>2016</b> , 225-239   | 0.9 | 2  |
| 60 | Real-time estimation of wildfire perimeters from curated crowdsourcing. <i>Scientific Reports</i> , <b>2016</b> , 6, 24206   | 4.9 | 18 |
| 59 | Stream Kriging: Incremental and recursive ordinary Kriging over spatiotemporal data streams. <i>Computers and Geosciences</i> , <b>2016</b> , 90, 134-143  | 4.5 | 19 |
| 58 | Trajectory similarity measures. <i>SIGSPATIAL Special</i> , <b>2015</b> , 7, 43-50   | 2.3 | 73 |
| 57 | On redundant topological constraints. <i>Artificial Intelligence</i> , <b>2015</b> , 225, 51-76  | 3.6 | 11 |
| 56 | Spatial Interpolation of Streaming Geosensor Network Data in the RISER System. <i>Lecture Notes in Computer Science</i> , <b>2015</b> , 161-177  | 0.9 | 2  |
| 55 | GI Expertise. <i>Transactions in GIS</i> , <b>2015</b> , 19, 499-515   | 2.1 | 6  |
| 54 | Challenges to using decentralized spatial algorithms in the field. <i>SIGSPATIAL Special</i> , <b>2015</b> , 7, 14-21  | 2.3 | 3  |
| 53 | Efficient, Decentralized Detection of Qualitative Spatial Events in a Dynamic Scalar Field. <i>Sensors</i> , <b>2015</b> , 15, 21350-76  | 3.8 |    |
| 52 | Spatio-Temporal Architecture-Based Framework for Testing Services in the Cloud <b>2015</b> ,   |     | 4  |
| 51 | Extracting Causal Rules from Spatio-Temporal Data. <i>Lecture Notes in Computer Science</i> , <b>2015</b> , 23-43  | 0.9 | 2  |
| 50 | Graphical Aids to the Estimation and Discrimination of Uncertain Numerical Data. <i>PLoS ONE</i> , <b>2015</b> , 10, e0141271  | 3.7 | 0  |
| 49 | Decentralized and coordinate-free computation of critical points and surface networks in a discretized scalar field. <i>International Journal of Geographical Information Science</i> , <b>2014</b> , 28, 1-21 | 4.1 | 25 |
| 48 | Mining candidate causal relationships in movement patterns. <i>International Journal of Geographical Information Science</i> , <b>2014</b> , 28, 363-382   | 4.1 | 20 |
| 47 | Decentralized Monitoring of Moving Objects in a Transportation Network Augmented with Checkpoints. <i>Computer Journal</i> , <b>2013</b> , 56, 1432-1449   | 1.3 | 17 |
| 46 | Spatio-temporal event detection using probabilistic graphical models (PGMs) <b>2013</b> ,  |     | 8  |
| 45 | A coordinate-free, decentralized algorithm for monitoring events occurring to peaks in a dynamic scalar field <b>2013</b> ,  |     | 1  |

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| 44 | Decentralized querying of topological relations between regions monitored by a coordinate-free geosensor network. <i>Geoinformatica</i> , <b>2013</b> , 17, 669-696                | 2.5 | 3   |
| 43 | Spatiotemporal Braitenberg vehicles <b>2013</b> ,  |     | 2   |
| 42 | Decentralized Detection of Topological Events in Evolving Spatial Regions. <i>Computer Journal</i> , <b>2013</b> , 56, 1417-1431   | 1.3 | 6   |
| 41 | Qualitative Spatial Structure in Complex Areal Objects Using Location-Free, Mobile Geosensor Networks <b>2013</b> ,  |     | 2   |
| 40 | Decentralized Spatial Computing <b>2013</b> ,  |     | 19  |
| 39 | Efficient, Decentralized Computation of the Topology of Spatial Regions. <i>IEEE Transactions on Computers</i> , <b>2011</b> , 60, 1100-1113                                       | 2.5 | 9   |
| 38 | Deferred decentralized movement pattern mining for geosensor networks. <i>International Journal of Geographical Information Science</i> , <b>2011</b> , 25, 273-292                | 4.1 | 11  |
| 37 | Efficient navigation for privacy-aware personal navigation services: Preliminary analysis <b>2011</b> ,  |     | 1   |
| 36 | Decentralized Reasoning about Gradual Changes of Topological Relationships between Continuously Evolving Regions. <i>Lecture Notes in Computer Science</i> , <b>2011</b> , 126-147 | 0.9 | 7   |
| 35 | Including landmarks in routing instructions. <i>Journal of Location Based Services</i> , <b>2010</b> , 4, 28-52  | 1.9 | 112 |
| 34 | Decentralized querying of topological relations between regions without using localization <b>2010</b> ,   |     | 3   |
| 33 | Qualitative Change to 3-Valued Regions. <i>Lecture Notes in Computer Science</i> , <b>2010</b> , 249-263   | 0.9 | 4   |
| 32 | Decentralized Spatial Computing in Urban Environments. <i>Geospatial Technology and the Role of Location in Science</i> , <b>2010</b> , 53-74                                      | 0.5 | 3   |
| 31 | Decentralized area computation for spatial regions <b>2009</b> ,   |     | 2   |
| 30 | Integrated Storage and Querying of Spatially Varying Data Quality Information in a Relational Spatial Database. <i>Transactions in GIS</i> , <b>2009</b> , 13, 25-42               | 2.1 | 1   |
| 29 | Decentralized environmental simulation and feedback in robust geosensor networks. <i>Computers, Environment and Urban Systems</i> , <b>2009</b> , 33, 256-268                      | 5.9 | 5   |
| 28 | Location Privacy <b>2009</b> , 254-259   |     | 1   |
| 27 | Identifying factors of geographic event conceptualisation. <i>International Journal of Geographical Information Science</i> , <b>2008</b> , 22, 183-204                            | 4.1 | 27  |

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|----|---|-----|-----|
| 26 | Efficient generation of simple polygons for characterizing the shape of a set of points in the plane. <i>Pattern Recognition</i> , <b>2008</b> , 41, 3224-3236      | 7.7 | 147 |
| 25 | Decentralized Movement Pattern Detection amongst Mobile Geosensor Nodes. <i>Lecture Notes in Computer Science</i> , <b>2008</b> , 199-216                           | 0.9 | 13  |
| 24 | Simplest Instructions: Finding Easy-to-Describe Routes for Navigation. <i>Lecture Notes in Computer Science</i> , <b>2008</b> , 274-289                             | 0.9 | 33  |
| 23 | Effect of Neighborhood on In-Network Processing in Sensor Networks. <i>Lecture Notes in Computer Science</i> , <b>2008</b> , 133-150                                | 0.9 | 7   |
| 22 | Automated Geographical Information Fusion and Ontology Alignment <b>2007</b> , 109-132  |     | 7   |
| 21 | Monitoring qualitative spatiotemporal change for geosensor networks. <i>International Journal of Geographical Information Science</i> , <b>2006</b> , 20, 1087-1108 | 4.1 | 78  |
| 20 | What Is the Region Occupied by a Set of Points?. <i>Lecture Notes in Computer Science</i> , <b>2006</b> , 81-98   | 0.9 | 42  |
| 19 | Qualitative reasoning about consistency in geographic information. <i>Information Sciences</i> , <b>2006</b> , 176, 601-627   | 7.7 | 29  |
| 18 | Geographic event conceptualization. <i>Cognitive Processing</i> , <b>2006</b> , 7, 52-54  | 1.5 | 1   |
| 17 | A Spatiotemporal Model of Strategies and Counter Strategies for Location Privacy Protection. <i>Lecture Notes in Computer Science</i> , <b>2006</b> , 47-64         | 0.9 | 13  |
| 16 | A Formal Model of Obfuscation and Negotiation for Location Privacy. <i>Lecture Notes in Computer Science</i> , <b>2005</b> , 152-170                                | 0.9 | 286 |
| 15 | Ontology-driven map generalization. <i>Journal of Visual Languages and Computing</i> , <b>2005</b> , 16, 245-267  |     | 39  |
| 14 | An algebraic approach to automated geospatial information fusion. <i>International Journal of Geographical Information Science</i> , <b>2005</b> , 19, 537-557      | 4.1 | 46  |
| 13 | Monitoring dynamic spatial fields using responsive geosensor networks <b>2005</b> ,   |     | 27  |
| 12 | Simulation of Obfuscation and Negotiation for Location Privacy. <i>Lecture Notes in Computer Science</i> , <b>2005</b> , 31-48                                      | 0.9 | 40  |
| 11 | Commonsense Notions of Proximity and Direction in Environmental Space. <i>Spatial Cognition and Computation</i> , <b>2004</b> , 4, 285-312                          | 1.3 | 14  |
| 10 | Simplest Paths: Automated Route Selection for Navigation. <i>Lecture Notes in Computer Science</i> , <b>2003</b> , 169-185  | 0.9 | 74  |
| 9  | Imprecise Navigation. <i>Geoinformatica</i> , <b>2003</b> , 7, 79-94  | 2.5 | 18  |

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|---|---|-----|-----|
| 8 | A User-Oriented Perspective of Error-sensitive GIS Development. <i>Transactions in GIS</i> , <b>2002</b> , 6, 179-193   | 2.1 | 8   |
| 7 | Integrating Spatio-thematic Information. <i>Lecture Notes in Computer Science</i> , <b>2002</b> , 346-361   | 0.9 | 11  |
| 6 | A formal approach to imperfection in geographic information. <i>Computers, Environment and Urban Systems</i> , <b>2001</b> , 25, 89-103                       | 5.9 | 81  |
| 5 | Object Calculus and the Object-Oriented Analysis and Design of an Error-Sensitive GIS. <i>GeoInformatica</i> , <b>2001</b> , 5, 261-289                       | 2.5 | 2   |
| 4 | Computational structure in three-valued nearness relations. <i>Lecture Notes in Computer Science</i> , <b>2001</b> , 76-91                                    | 0.9 | 10  |
| 3 | Spatial data quality capture through inductive learning. <i>Spatial Cognition and Computation</i> , <b>2000</b> , 2, 261-282                                  |     | 1   |
| 2 | Assessment of error in digital vector data using fractal geometry. <i>International Journal of Geographical Information Science</i> , <b>2000</b> , 14, 67-84 | 4.1 | 12  |
| 1 | GIS   |     | 192 |