

Professor Rajiv Ranjan, PhD, MAE, SMIEEE

School of Computing
Newcastle University
Newcastle upon Tyne
United Kingdom, NE1 7RU

Email: raj.ranjan@ncl.ac.uk
DOB: 20th Dec. 1980
Contact: (M) +44 7 468 499 435
Web: <http://rajivranjan.net>

BRIEF NARRATIVE SUMMARY

Rajiv Ranjan is a fellow of Academia Europaea and Professor in Computing Science at Newcastle University, United Kingdom. He has received three IEEE research excellence awards (*2019 IEEE TCSVC Rising Star Award, 2018 IEEE TCCPS Early Career Award, and 2016 IEEE TCSC Award for Excellence in Scalable Computing*), which recognised his ground-breaking and outstanding contributions in developing resource management algorithms, data management techniques and service-oriented architectures for Cloud computing, Internet of Things (IoT) and Big Data Systems. Another testimonial of his international research leadership was his appointment by IEEE Computer Society as the Advisory Board Chair and Lead Editor for the Blue Skies department of IEEE Cloud Computing (2014-2018). In this appointment, Prof Ranjan's main role was to develop a vision for the research community to guide future research at the intersection of Cloud computing, IoT and Big Data Systems. He serves (or have served) on the editorial boards of top quality international journals including IEEE Transactions on Cloud computing (2014-2019), IEEE Transactions on Computers (2014-2016), ACM Computing Surveys (2020-), ACM Transactions on Internet of Things (2019-), IEEE Cloud Computing (2014-2018), Springer Computing (2016-) and The Computer Journal (2017-2019).. His research outcomes include about 300 academic peer-reviewed articles and multiple open source software toolkits – stemming from research projects worth over \$32 Million AUD (£16 Million+ GBP).

EDUCATION AND TRAINING

Doctor of Philosophy¹ – Computer Science and Software Engineering (2003-2007)

University of Melbourne, Victoria, Australia

Post-Doctoral Research Fellow - Computing and Information Systems (March 2008 – April 2009)

University of Melbourne, Victoria, Australia

PROFESSIONAL APPOINTMENTS

Fellow (July 2021 - present)

Academy of Europe

Academic Director - School's Chair (August 2020 - present)

School of Computing, Newcastle University, UK

Chair of Internet of Things (August 2018 - present)

School of Computing, Newcastle University, UK

Reader (September 2015 – July 2018)

School of Computing, Newcastle University, UK

Guest Chair Professor (December 2015 - 2020)

School of Computer Science, China University of Geosciences, China

Honorary Associate Professor [Level D] (October 15 2016 – December 2019)

Research School of Computer Science, Australian National University, Australia

Visiting Scientist (September 2015 – August 2018)

Data61 (previously Digital Productivity Flagship), CSIRO, Australia

Julius Fellow (July 2013 – August 2015)

Office of Chief Executive (OCE), CSIRO, Australia

Senior Research Scientist [CSOF 6] (August 2011 – August 2015)

Digital Productivity and Services Flagship, CSIRO, Australia

Adjunct Senior Lecturer [Level C] (October 15, 2011 – October 2016)

School of Computer Science and Engineering, University of New South Wales, Australia

Senior Research Associate² [Level B] (May 2009 – August 2011)

School of Computer Science and Engineering, University of New South Wales, Australia

¹ Integrated Masters of Engineering Science and Doctor of Philosophy program

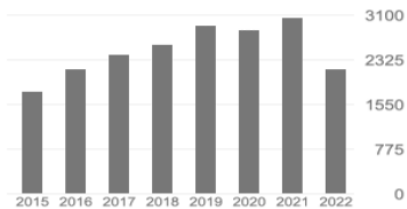
² Marks (2009) the start of independent research career. This position was funded by University of South Wales's strategic e-Research fund and Cooperative Research Centre (CRC) on smart services

RESEARCH IMPACT SUMMARY

Prof. Ranjan conducts high-impact research in distributed computing systems and has published about 300 scientific publications (full list can be found at rajivranjan.net) that includes 205+ journal articles, 70+ conference papers, 15 book chapters, and 12 edited research books. His work has been extensively cited internationally.

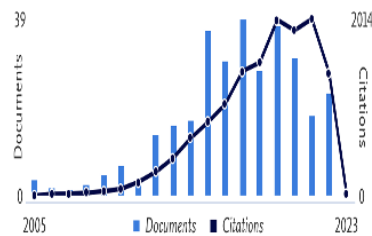
Google Scholar Statistics as on 13/10/2022

	All	Since 2017
Citations	24773	16007
h-index	68	60
i10-index	228	193



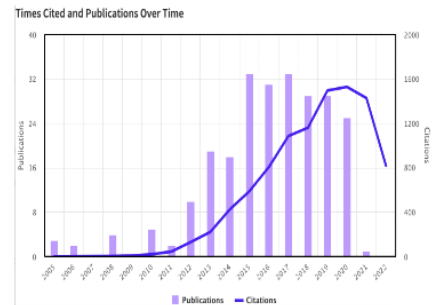
Scopus Index as on 13/10/2022

317 Documents by author 13811 Citations by 11714 documents 53 h-index:
Document & citation trends



Thomson Reuters Statistics as on 13/10/2022

244 Publications in Web of Science 9,769 Sum of Times Cited 44 H-Index



According to Google Scholar (scholar.google.com/citations?user=Y_Y3fVEAAAAAJ), Prof. Ranjan's publications have received **24700+ citations** in total, he has an **h-index of 68 and an i10-index of 288** (35 >100 citations, 3 >1000 citations, 1 >5000 citations), increasing recent trajectory, with 2100+ till October 2022, 3000+ in 2021, 2800+ in 2020, 2900+ in 2019, 2500+ citations in 2018, 2400+ citations in 2017, 2100+citations in 2016, 1700+ citations in 2015, 1500+ citations in 2014 and 1000+ citations in 2013. According to Scopus, Prof. Ranjan's publications have been cited 13,800+ (**h-index 53: Author-ID 57197711780**). His papers have received 9700+ **citations (h-index of 44)**, according to Web of Science Journal Citation Report (<http://www.researcherid.com/rid/F-4700-2011>). These clearly demonstrate Prof. Ranjan's international research leadership in the parallel and distributed computing systems research area (e.g. Cloud computing, Big Data Systems, and Internet of Things).

ADDITIONAL EVIDENCE OF INTERNATIONAL ESTEEM

- According to the bibliometric site maintained by the University of California (Los Angeles), I am one of the highly cited authors (<http://bit.ly/2E9MO6K>, top 0.05%) in computer science and software engineering worldwide (h-index=68, i-index=226, and 24500+ google scholar citations).
- I also have several highly cited papers in Clarivate Analytics Web of Science (h-index of 44 and total citations > 9700) and Scopus (h-index of 53 and total citations > 13500).
- Since starting my career as an Independent Researcher in 2009, research papers had a *field-weighted citation impact of 3.07*, according to Scopus SciVal. This is considered high in a computer science subject.
- Ranked by Microsoft Academic (November 2021) as one of the Top Authors in Cloud Computing, Big Data, Quality of Service, Resource Management, and Services Computing research area.
- In the subject field 'Cloud Computing; Clouds; Distributed Computer Systems', Scopus SciVal ranks me *#3 in the world* based on citations (6,337 citations, 98 publications, 2010-2019).
- According to a recent (2020) bibliometric study by Stanford University (<https://bit.ly/3ndOXIN>), I am one of the highly cited authors in the distributed computing field in 2019 (Rank 6) and all-time (Rank 26).
- In the period (2012-2021), 36.6% (98 out of 268 papers) of my conference and journal publications *are in the top 10%* (i.e., output in the top citations percentile) of most cited publications worldwide in computer science (Scopus SciVal).
- In the period (2012-2021), 34.8% of my journal publications *are in the top 10%* of journals in computer science (Scopus SciVal).
- I am the inventor of CloudSim – it is the world's most adopted and cited Parallel and Distributed Computing (PDC) simulation toolkit since the 1960s (Scopus search keywords 'Distributed Computer Systems'). With nearly 3600 citations, the CloudSim paper is the fourth most cited (Scopus, top 0.005%) of 78,641 papers published in 'Distributed Computer Systems' between 1960 and 2020.

INTERNATIONALLY LEADING PUBLICATIONS' QUALITY

All of Rajiv's papers are available at <http://rajivranjan.net/publications/>. He has published about 300 journal and conference papers across the areas of Cloud Computing, the Internet of Things, and Big Data Analytics. Rajiv's total number of publications to date is 12 edited books, 15 book chapters, 200 journal papers, and 66 refereed conference papers.

The papers appeared in top journals and conferences in his field. The importance/esteem of these journals/conferences is demonstrated by their relative impact factors (IF) according to SCI (Web of Science Citation Index), Google Scholar H5-index, and CORE (<http://www.core.edu.au/>) ranking in the field.

Some of these highly regarded journals, where he has published, include IEEE Transactions on Parallel and Distributed Systems (IF: 3.757 , CORE A*), IEEE Transactions on Cloud Computing (IF: 5.697), IEEE Transactions on Knowledge and Data Engineering (IF: 9.235, CORE A), IEEE Transactions on Computers (IF: 3.183, CORE A*), IEEE Transactions on Services Computing (IF: 11.019), IEEE Transactions on Industrial Informatics (IF: 11.648), IEEE Network (IF: 10.294), IEEE Internet of Things (IF: 10.2), IEEE Communications Surveys and Tutorials (IF: 25), ACM Computing Surveys (IF: 14.32, CORE A*), among others. The relative importance of these journals is also established by the fact that they are ranked in the top 10 per cent in the “Computer Science” Subject Area according to Scopus.

A sample of the prestigious conferences at that he has presented his work is: IEEE/ACM Intl. World-Wide Web Conf. (CORE A*), International Conference on Very Large Databases (CORE A*), IEEE International Conference on Distributed Computing Systems (CORE A), IEEE International Conference on Parallel Processing (CORE A), IEEE International Conference on Services Computing (CORE A), Symposium on Reliable Distributed Systems (SRDS, CORE A), and ACM International Conference on Information and Knowledge Management (CIKM, CORE A). The relative importance of these conferences is measured by the acceptance rates between 15%-25%.

RESEARCH SUPERVISION

- 10 graduated PhD students, 1 graduated Masters by Research student. Supervised 4 post-doctoral fellows. Currently advising 10 PhD students in Australia, China, and UK.

HONORS AND AWARDS

1. **2022 IEEE Cloud Best Student Paper Award** (<https://conferences.computer.org/services/2022/awards/>). This award annually recognizes a student paper from either academia or industry that has demonstrated outstanding contributions to the Cloud Computing paradigm.
2. **2019 IEEE TCSVC Rising Star Award** (<http://tab.computer.org/tcsvc/activities/>). This award annually recognises up to two researchers from either academia or industry who have demonstrated outstanding contributions (publications, citations, grant record, community service) to the field of Services Computing.
3. **2019 IEEE Systems Council Best Paper Award** (<https://ieeesystemscouncil.org/awards/systems-journal-best-paper-award>). This award is given annually to the papers deemed the best among those published in the IEEE Systems Journal during the preceding calendar year.
4. **2018 IEEE TCCPS Early Career Award** (<http://www.ieee-cps.org/award.html>). This award annually recognizes up to two researchers from either academia or industry who has demonstrated outstanding contributions (publications, citations, grant record, community service) to the field of Cyber-Physical System (CPS).
5. **2018 IEEE Systems Council Best Paper Award** (<https://ieeesystemscouncil.org/awards/systems-journal-best-paper-award>). This award is given annually to the papers deemed the best among those published in the IEEE Systems Journal during the preceding calendar year.
6. **2017 Elsevier High Quality Research Paper**, G-Hadoop paper (doi: 10.1016/j.future.2012.09.001) selected by Elsevier for celebrating the Chinese Computer Science Research landscape in the last five years (2012-2017).
7. **2016 IEEE TCSC Award for Excellence in Scalable Computing (Middle Career Researcher)**. Recognizing only 3 individuals for outstanding, influential, on-going, potentially long-lasting contributions to scalable computing within 5-10 years of receiving their PhD. Criteria: excellence in publications, citations, community service, research supervision and grant record.
8. **2014 ICT Young Professional of the Year Award (Finalist)** Recognizing the top 3 professionals in Australian Govt. Departments who have made major innovations in the ICT sector that year.
9. **2013 Julius Career Award Fellowship**. Conferred by office of Chief Executive, CSIRO, Australia. Honours outstanding scientists who demonstrate research excellence.
10. **2013 Best Paper Award** (trust.csu.edu.cn/conference/hpcc2013/bestpaper/hpcc-2-90.pdf) for 'Using Traditional Data Analysis Algorithms to Detect Access Patterns for Big Data Processing', 15th IEEE International Conference on High Performance Computing and Communications.
11. **2011 Goldstar Award**. (https://research.unsw.edu.au/unsw-internal-funding-opportunities#Goldstar_Anchor). Presented by UNSW for excellent research outcomes to researchers who narrowly miss out on Australian Research Council Discovery Project (<http://www.arc.gov.au/>) grant funding.
12. **2009 Outstanding Paper on New Communications Topic**. For 'Peer-to-Peer Based Discovery of Grid Resource Information: A Tutorial' (doi: 10.1109/COMST.2008.4564477) in IEEE Communications Surveys and Tutorials Journal. Given (www.comsoc.org/about/memberprograms/comsoc-awards/advances) to a paper that opens new lines of work, envisions bold approaches to communication, formulates new problems to solve, and enlarges the field of

communications engineering, published in any IEEE Communications Society journal or conference in the previous 15 calendar years.

13. **2003-2007 International Postgraduate Research Scholarship Award**, Department of Education. To attract top quality international postgraduate students to Australian research. Each year, only 330 awards are offered across 40 Australian universities. (<http://education.gov.au/international-postgraduate-research-scholarships>)

RESEARCH GRANT SUPPORT (2009 - present)

Total Value: ~£32 Million AUD (~£16 Million GBP)

1. **R. Ranjan** (PI), G. Morgan, A. van Moorsel, P. James, O. Rana, J. Liang, P. Blythe, UK-Australia Centre in a Secure Internet of Energy: Supporting Electric Vehicle Infrastructure at the "Edge" of the Grid, 2022-2024, EP/W003325/1, EPSRC (UK), with Cardiff University, Combined Value – £1.8 Million GBP – FEC.
2. **R. Ranjan** (PI), G. Morgan, A. van Moorsel, E. Solaiman, and Z. Wen (named fellow), Scalable Circular Supply Chains for the Built Environment, EPSRC, EP/V042017/1, July 2021 – June 2024, £453,561 GBP – FEC. (Joint project, EP/V042521/1, with Cardiff University, Combined Value – £1.2 Million GBP – FEC.
3. J. Liang (Cardiff PI and Overall Consortium Lead), **R. Ranjan** (Newcastle PI), O. Rana (Co-I), L. Cipcigan (Co-I), et al., Sustainable urban power supply through intelligent control and enhanced restoration of AC/DC networks, EPSRC-NSFC Call in Sustainable Power Supply, 2019-2022, EP/T021985/1, Combined Value across UK (Newcastle and Cardiff University) and Chinese Consortium – £1,100,000+ GBP – FEC, Prof. Ranjan 's allocation (15% FEC).
4. D. Kirk (PI), SW Lawson (Co-I), AC Durrant (Co-I), P James (Co-I), **R Ranjan** (Co-I), Centre for Digital Citizens – Next Stage Digital Economy Centre, 2020-2025, EP/T022582/1, Combined Value across UK Consortium – £4,700,000+ GBP – FEC, Prof. Ranjan 's allocation (5% FEC).
5. **R. Ranjan** (PI) and G Morgan, A Semantic Approach to Health Data Governance for Privacy, Accountability, Confidence and Transparency , Research Impact Fund, School of Computing, £20,000 GBP.
6. **R. Ranjan** (PI),..., Z Wen (Co-I), Osmotic MindSphere: Multi-Resolution Air Quality Modelling across Cloud and Edge, Pitch-In: Connecting capabilities for the Internet of Things, Research England (P35792/BH192113), 2019-2021, £254,648.14 GBP – Full Economic Cost (FEC).
7. **R. Ranjan** (PI), IoTsim-Edge: Simulation and Modelling infrastructure for Edge Applications, Research Impact Fund, School of Computing, £15,000 GBP.
8. **R. Ranjan** (PI) and S. Papagiannidis, PACE: Privacy-Aware Cloud Ecosystems, Engineering and Physical Sciences Research Council (EPSRC – EP/R033293/1), 2018-2021, \$800,000 AUD (£400,000 GBP) – Full Economic Cost. (Joint project (EP/R033439/1) with Cardiff University and University College London, Combined Value – \$2,200,000 AUD (£1,145,160.28 GBP) – FEC)
9. S. Barr (PI), **R. Ranjan** (Co-Investigator), et al., Flood-PREPARED: Predicting Rainfall Events by Physical Analytics of Realtime Data, Natural Environment Research Council (NERC– NE/P017134/1), 2017 – 2021, \$3,600,000 AUD (£1,800,000 GBP – Full Economic Cost), Prof. Ranjan 's allocation (10% FEC).
10. B. Malamud (Kings College London PI and Overall Consortium Lead), **R. Ranjan** (Newcastle PI), et al., Landslide Multi-Hazard Risk Assessment, Preparedness and Early Warning in South Asia: Integrating Meteorology, Landscape, and Society, Science for Humanitarian Emergencies and Resilience, Jan 2016 Round, Natural Environment Research Council (NERC), 2016 – 2020, \$4,000,000 AUD (£2,000,000 GBP – Full Economic Cost), Prof. Ranjan 's allocation (10% FEC).
11. **R. Ranjan** (PI), P. Watson (Co-I), and X. Li (Co-I), Newcastle-Singapore Full PhD Scholarship (2016-2020) for conducting research on 'Scalable Monitoring and Big Data Analytics Driven Management of Cloud Data Centres'. Amount: \$160,000 AUD (£80,000 GBP).
12. S. Barr (PI), R. Dawson, and **R. Ranjan** (Co-I), High-dimensional Multi-Objective Spatial Risk and Sustainability Optimisation Tools using Cloud-enabled Evolutionary Computing, NERC DREAM (Data, Risk and Environmental Analytical Methods) PhD CDT (Centre of Doctoral Training) Studentship, 2016-2019, \$132,000 AUD (£66,000 GBP), Prof. Ranjan 's allocation (30% FEC).
13. S. Barr, S. Hallett, and **R. Ranjan** (Co-I), Big Data Tools for Massively Distributed Environmental Hazard Data Lakes, NERC DREAM (Data, Risk and Environmental Analytical Methods) PhD CDT Studentship, 2016-2019, \$132,000 AUD (£66,000 GBP), Prof. Ranjan's allocation (30% FEC).

14. **R. Ranjan** (CSIRO PI and Overall Consortium Lead), Rajkumar Buyya (University of Melbourne PI), et al., Innovative Solutions for Management of Big Data and Disaster Management Applications on Clouds, Australia-India Strategic Research Fund Round 7, 2013, \$884,000 AUD (\$440,000 AUD incl. GST (Department of Industry, Australia) and \$444,000 AUD (co-investment or cost sharing by CSIRO and University of Melbourne). (£440,000 GBP)
15. **R. Ranjan** (PI), MediaWise: A Media-driven NBN Project Aiming to Impact Education, News, and Entertainment, CSIRO Strategic, Portfolio: Digital Technologies & Services, Theme: Smart Secure Infrastructure, Stream: Broadband Services, August 2011- June 2013, ~\$1,000,000 million AUD (£500,000 GBP).
16. **R. Ranjan** (PI), P. Jayaraman (Co-I), and D. Georgakopoulos (Co-I), A Risk and Feasibility Assessment for Migrating Battle Management Systems to Virtualised Data Centre Environment, DSTO Capability Development Technology Round 18, 2013, \$10000 AUD. (Stage 1 Success award). (£5,000 GBP)
17. **R. Ranjan** (PI and Fellow), CSIRO Office of Chief Executive Julius Career Award Fellowship, CSIRO, July 2013 – June 2016, \$150000 AUD. (£75,000 GBP)
18. **R. Ranjan** (PI), CSIRO Digital Productivity Flagship Collaboration PhD Top-up Scholarship at University of Technology Sydney (June 2014 – June 2017) for conducting research on ‘Secure Processing of Big Data Streams on Clouds’, \$39000 AUD. (£19,000 GBP)
19. **R. Ranjan** (PI), CSIRO Office of Chief Executive Top-Up Scholarship at Australian National University (2012-2015) for conducting research on ‘Investigating Techniques for Optimizing Cloud Service Selection Decision Making’, Amount: \$34000 AUD. (£17,000 GBP)
20. **R. Ranjan** (PI), CSIRO Office of Chief Executive PhD Top-Up Scholarship at University of Technology Sydney (2012-2014) for conducting research on ‘Cloud-based Large Scale Distributed Semantic Data Management with Security Awareness’. Amount: \$35500 AUD. (£17,000 GBP)
21. **R. Ranjan** (PI), CSIRO ICT Centre PhD Top-Up Scholarship at University of Sydney (2013-2016) for conducting research on ‘Dynamic and Static Analysis for Mapping and Scheduling Algorithms on Parallel Computing Systems’. Amount: \$30000 AUD. (£15,000 GBP)
22. **R. Ranjan** (PI), CSIRO Office of Chief Executive Full PhD Scholarship at Australian National University (2013-2016) for conducting research on ‘A Cloud-based Framework for Efficient Portability and Shaping of Big Data’, Amount: \$123000 AUD. (£62,000 GBP)
23. **R. Ranjan** (PI) and Prof. M. Parashar (Co-I), “Comprehensive Model-driven ProVSCioning of Services in Composite Systems”, University of New South Wales Goldstar Grant Award, January 2011- December 2011, \$30000 AUD. (£15,000 GBP)
24. A. Liu (PI), **R. Ranjan** (Co-I), and Service Aggregation Project Team, CRC Smart Services, University of New South Wales, September 2010 – September 2011, \$128000 AUD. (£64,000 GBP - FEC), Prof. Ranjan’s allocation (50% FEC)

SHOLARSHIPS

1. **R. Ranjan** (Scholarship), Melbourne International Research Scholarship, Department of Computer Science and Software Engineering, University of Melbourne, July 2003 – July 2007, \$72000 AUD. (£36,000 GBP)
2. **R. Ranjan** (Scholarship), International Postgraduate Research Scholarship (IPRS), Department of Industry, Innovation Science, Research and Tertiary Education, July 2003 – July 2007, \$72000 AUD. (£36,000 GBP)
3. **R. Ranjan** (Scholarship), IEEE Technical Committee on Scalable Computing (TCSC) Student Travel Grant (2005, 2006, and 2007), \$3000 AUD. (£1500 GBP)

FEATURED AND SPOTLIGHT ARTICLES

- 2021, ‘BaPa: A Novel Approach of Improving Load Balance in Parallel Matrix Factorization for Recommender Systems’, IEEE Transactions on Computers, 70(5): 789-802.
- 2016, ‘Migrating Smart City Applications to the Cloud’, IEEE Cloud Computing, 3(2):72-79.
- 2016, ‘Dimensions for Evaluating Cloud Resource Orchestration Frameworks’, IEEE Cloud Computing, 49(2):24-33.
- 2016, ‘Threats to Networking Cloud and Edge Datacenters in the Internet of Things’, IEEE Cloud Comp., 3(3):64-71.
- 2015, ‘A Parallel File System with Application-Aware Data Layout Policies for Massive Remote Sensing Image Processing in Digital Earth’, IEEE Trans. on Parallel and Distributed Systems, IEEE Cloud Comp., 25(8): 2126-2137.
- 2015, ‘Processing Distributed Internet of Things Data on Clouds’, IEEE Cloud Computing, 2(1):76-80.

- 2015, 'End-to-End Privacy of Open Big Data Markets', IEEE Cloud Computing, 2(4):44-53.

CONFERENCE LEADERSHIP (CONFERENCES)

Technical Program Committee of 60+ international IEEE/ACM/EAI workshops and conferences, and a Session Chair for 10+ IEEE/ACM/EAI workshops and conferences since 2005. Program chair for AUSEPC 2010-2012, IEEE BDSE 2014, IEEE PriSec 2014, IEEE DataCom 2016, and EAI CN4IoT 2017

SCIENTIFIC LEADERSHIP (JOURNALS)

Journal Associate Editorship

- IEEE Trans. on Computers (2014-2016), IEEE Trans. on Cloud Computing (2014-2019), IEEE Cloud Computing (2014-2018), Future Generation Computer Systems (2012-2019), IEEE IT Professional (2016-2018), Springer Computing (2016-), IET Cyber-Physical Systems: Theory & Applications (2016-), The Computer Journal (2017-), ACM Computing Surveys (2020 -), and ACM Transactions on Internet of Things (2019 -).
- 2014 - 2018, Advisory Board Chair and Editor, Blue Skies Column Department, IEEE Cloud Computing. This column (reviewed by editorial board) appeared in every issue of the magazine. The column provided in-depth analyses of the most recent and influential research related to cloud computing, internet of things and big data.

Journal Guest Editorship (Invited)

- IEEE Trans. on Computers (2015), IEEE Trans. on Cloud Computing (2014), IEEE Trans. on Emerging Topics in Computing (2015), IEEE Cloud Computing (2014), IEEE Trans. on Sustainable Computing (2016), IEEE Trans. on Computational Social Systems (2016), Software Practice and Experience (2014-16), Springer Computing (2016, 2017, 2018), IEEE Transactions on Services Computing (2018), IEEE Transactions on Network and Service Management (2017), and ACM Transactions on Cyber-Physical Systems (2018).

ESTEEM INDICATOR (GRANT PROPOSAL REVIEWER)

2013 -, ANR (France), ARC (Australia), EPSRC (UK), NOW (Netherlands), National Science Centre (Poland), Horizon 20/20, SNF (Switzerland), and FWF (Austria).

TEACHING ACTIVITIES (SELECTED)

2019-, Module Leader, Subject: Internet of Things (CSC8112), School of Computing, Newcastle University
 2016-, Module Leader, Subject: Cloud Computing (CSC8110), School of Computing, Newcastle University
 2008-2009, Teaching Assistant, Subject: Cluster and Grid Computing, University of Melbourne, Australia
 2009-2011, Guest Lecturer, Subject: Systems Delivery and Implementation, University of NSW, Australia
 2014, Guest Lecturer, Subject: Information Systems Architecture and Design, UTS, Sydney, Australia

INVITED TALKS AND LECTURES

- 2011 'Cloud Resource Orchestration: state-of-the-art and research challenges', Invited Tutorial, SEARC Asia Pacific Conference (<http://searcc2011.doattend.com/>), Mumbai, India.
- 2012 'Cloud Resource Orchestration – overview, issues, and directions', Invited Tutorial, 1st International Conference on Advances in Cloud Computing (ACC 2012), Bangalore, India.
- 2012, 'Cloud Computing – Content Delivery and Cloud Security' and 'Internet of Things, Sensing, and Big Data Analytics', CSIRO – Chinese Academy of Sciences Joint Workshop, Beijing China.
- 2012 'Cloud-based Secure Content Management', Data Analytics Department, I²R, A*STAR, Singapore.
- 2014 'Cloud-based Multimedia Content Management Services: application area overview and research issues', Invited Talk, School for Computer and Communication Science (I&C), EPFL, Lausanne, Switzerland.
- 2014 'Hybrid Big Data Processing in Datacentre Clouds for IoT Applications: overview, issues, and directions', Keynote, International Workshop on Future Trends of Big Data, Systems, and Networking, Deakin University, Australia.
- 2014 'Smart Media Cloud Platform', Invited Talk, Samsung Research Laboratory, Bangalore, India.
- 2019 'Osmotic Computing: Efficient Data Processing in Edge-Cloud Setting', ALGO 2019, Munich, Germany
- 2020 'New Horizons in IoT Workflows Provisioning in Edge and Cloud Datacentres for Fast Data Analytics: The Osmotic Computing Approach', (CLOSER/IoTBDS/COMPLEXIS 2020), Prague, Czech Republic

SELECTED PBLICATIONS

1. Z. Wen, T. Lin, R. Yang, S. Ji, **R. Ranjan**, A. Romanovsky, C. Lin and J. Xu, "GA-Par: Dependable Microservice Orchestration Framework for Geo-Distributed Clouds," *IEEE Transactions on Parallel and Distributed Systems*, IEEE Computer Society, vol. 31, no. 1, 2019, doi: 10.1109/TPDS.2019.2929389. [ERA A*, ISI Impact Factor 3.4]
2. B. Qian, J. Su, Z. Wen, D. N. Jha, Y. Li, Y. Guan, D. Puthal, P. James, R. Yang, A. Y. Zomaya, O. Rana, L. Wang, M. Koutny, and **R. Ranjan**. "Orchestrating the Development Lifecycle of Machine Learning-Based IoT Applications: A Taxonomy and Survey," *ACM Computing Surveys*, vol. 53, no. 4, 2020, doi:10.1145/3398020.
3. X. Zeng, S. K. Garg, M. Barika, S. Bista, D. Puthal, A. Y. Zomaya, and **R. Ranjan**, "Detection of SLA Violation for Big Data Analytics Applications in Cloud," *IEEE Transactions on Computers*, 2020, doi: 10.1109/TC.2020.2995881.
4. R. Guo, F. Zhang, L. Wang, W. Zhang, X. Li, **R. Ranjan**, and A. Y. Zomaya, "BaPa: A Novel Approach of Improving Load Balance in Parallel Matrix Factorization for Recommender Systems," *IEEE Transactions on Computers*, 2020, doi: 10.1109/TC.2020.2997051.
5. **R. Ranjan**, C-H Hsu, L. Y. Chen, and D. Georgakopoulos, "Holistic Technologies for Managing Internet of Things Services," *IEEE Transactions on Services Computing*, vol. 13, no. 4, 2020, doi: 10.1109/TSC.2020.3000844.
6. S. Luo, H. Li, Z. Wen, B. Qian, G. Morgan, A. Longo, O. Rana, and **R. Ranjan**, "Blockchain based Task Offloading in Drone-aided Mobile Edge Computing," *IEEE Network Magazine*, 2020.
7. M. Barika, S. Garg, and **R. Ranjan**, "Cost effective stream workflow scheduling to handle application structural changes," *Future Generation Computer Systems*, vol. 112, pp. 348-361, 2020, doi:10.1016/j.future.2020.05.036. [ERA A Journal, ISI impact factor: 3.99]
8. J. Yan, L. Mu, L. Wang, **R. Ranjan**, and A. Y. Zomaya, "Temporal Convolutional Networks for the Advance Prediction of ENSO," *Scientific Reports* vol. 10, no. 8055 (2020), doi:10.1038/s41598-020-65070-5.
9. K. Alwasel, D. N. Jha, E. Hernandez, D. Puthal, M. Barika, B. Varghese, S. Garg, P. James, A. Zomaya, G. Morgan, **R. Ranjan**, "IoTSim-SDWAN: A Simulation Framework for Interconnecting Distributed Datacenters over Software-Defined Wide Area Network (SD-WAN)," *Journal of Parallel and Distributed Computing*, vol. 143, pp. 17-35, 2020, doi:10.1016/j.jpdc.2020.04.006.
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