

Journal Reviewing

ACM Transactions of Information Systems, ACM Transactions on Computer Systems, ACM Transactions on Database Systems, ACM Transactions on Storage, IEEE Transactions on Computers, Algorithmica, Information Processing and Management, Software Practice and Experience

Grant Reviewing

ARC Discovery Projects, 2011 - present.
European Research Council (ERC) 2015.

UNIVERSITY ACTIVITIES

ITS Committee Chair, 2012-2013
ISAR Discipline Coordinator, 2010
Staff Committee Chair, 2011
Teaching Committee, 2010
Staff Committee, 2009-2011

GRANTS

ARC Discovery Early Career Research Award DE140100275: J. S. Culpepper: "Beyond keyword search for ranked document retrieval." 2014 – 2016 (\$392,979).

ARC Discovery Grant DP140101587: T. Sellis, J. S. Culpepper, N. Mamoulis, and C. S. Jensen: "Efficient and effective ad-hoc retrieval using structured and unstructured geospatial information." 2014 – 2016 (\$422,000).

ARC Discovery Grant DP110101743: A. Moffat, A. Wirth, J. S. Culpepper, and A. Turpin: "Efficient and effective algorithms for searching strings in secondary storage." 2011 – 2013 (\$360,000).

RMIT Seed Grant: J. S. Culpepper: "Novel ranking algorithms for unrestricted text indexing." 2010 (\$20,000).

RMIT PaCE Grant: J. S. Culpepper: "Algorithms and Analysis Course Renewal." 2009 (\$5,000).

AWARDS

Best Paper: ADCS Conference, December 2012.

Supervised Best M.S. Minor Thesis: M. S. Petri: "Ranking in full-text indices." 2009.

Best Paper: ADCS Conference, December 2007.

Outstanding Teaching Award; University of Melbourne, 2007.

NICTA Phd Scholarship: University of Melbourne, 2005-2008.

EDITED COLLECTIONS

J. S. Culpepper, L. A. Park, and G. Zuccon, editors. *Proceedings of the 19th Australasian Document Computing Symposium (ADCS 2014)*.

J. S. Culpepper, G. Zuccon, and L. Sibon editors. *Proceedings of the 18th Australasian Document Computing Symposium (ADCS 2013)*.

A. Trotman, C. L. A. Clarke, I. Ounis, J. S. Culpepper, M.-A. Cartright, and S. Geva, editors. *Proceedings of the SIGIR Workshop on Open Source Information Retrieval (OSIR 2012)*.

JOURNAL PUBLICATIONS

G. K. Jayasinghe, W. Webber, M. Sanderson, L. S. Dharmasena, and J. S. Culpepper. "Statistical comparisons of non-deterministic IR systems using two dimensional variance." *Information Processing & Management (IPM)*, 51(5):pp 677 – 694, Sep 2015.

S. Gog, A. Moffat, J. S. Culpepper, A. Turpin, and A. Wirth. "Large-scale pattern search using

reduced-space on-disk suffix arrays.” *IEEE Transactions on Knowledge and Data Engineering*, 26(8): pages 1918 – 1931, Aug 2014.

S. Huston, J. S. Culpepper, and W. B. Croft. “Indexing Word-Sequences for Ranked Retrieval.” *ACM Transactions on Information Systems*, 32(1): pages 3-1 – 3-26, Jan 2014.

G. K. Jayasinghe, J. S. Culpepper, and P. Bertok. “Efficient and Effective realtime prediction of drive-by download attacks.” *Journal of Network and Computer Applications*, 38: pages 135 – 149, Feb 2014.

J. S. Culpepper, M. Petri, and S. J. Puglisi. “Revisiting bounded context block-sorting transformations.” *Software Practice and Experience*, 42(8):pages 1037 – 1054, Aug 2012.

J. S. Culpepper and A. Moffat. “Efficient set intersection for inverted indexing.” *ACM Transactions on Information Systems*, 29(1): pages 1.1 – 1.25, Dec 2010.

E. V. Sadanandan, S. K. Pillai, M. V. Laksmikantham, A. D. Billimoria, J. S. Culpepper, and M. P. Cava. “Efficient syntheses of the marine alkaloids Makaluvamine D and Discorhabdin C: The 4, 6, 7-trimethoxyindole approach.” *Journal of Organic Chemistry*, 60(6): pages 1800–1805, 1995.

REFEREED
CONFERENCE
PROCEEDINGS

X. Lu and A. Moffat and J. S. Culpepper. “On the Cost of Extracting Proximity Features for Term-Dependency Models” In *Proceedings of the 24th ACM International Conference on Information and Knowledge Management (CIKM 2015)*, To appear.

X. Lu and A. Moffat and J. S. Culpepper. “Experiments into the Consistency of Effectiveness Metrics.” In *Proceedings of the SIGIR 2015 Workshop on Reproducibility, Inexplicability, and Generalizability of Results (RIGOR 2015)*, To appear.

F. M. Choudhury, J. S. Culpepper, and T. Sellis. “Batch processing of top-*k* spatial-textual queries.” In *Proceedings of the Second International ACM SIGMOD Workshop on Managing and Mining Enriched Geo-Spatial Data (GEORICH 2015)*, June 2015.

X. Lu and A. Moffat and J. S. Culpepper. “How effective are proximity scores in term dependency models?” In *Proceedings of the 19th Annual Australasian Document Computing Symposium (ADCS 2014)*, pages 89-92 November 2014.

G. K. Jayasinghe, W. Webber, M. Sanderson, and J. S. Culpepper. “Improving test collection pools with machine learning.” In *Proceedings of the 19th Annual Australasian Document Computing Symposium (ADCS 2014)*, pages 2-9 November 2014.

G. K. Jayasinghe, W. Webber, M. Sanderson, and J. S. Culpepper. “Extending test collection pools without manual runs.” In *Proceedings of the 37th Annual International Conference on Research and Development in Information Retrieval (SIGIR 2014)*, pages 915-918, July 2014.

G. K. Jayasinghe, W. Webber, M. Sanderson, L. S. Dharmasena, and J. S. Culpepper. “Evaluating non-deterministic retrieval systems.” In *Proceedings of the 37th Annual International Conference on Research and Development in Information Retrieval (SIGIR 2014)*, pages 911-914, July 2014.

J. S. Culpepper, S. Mizzaro, M. Sanderson, and F. Scholer. “TREC: Topic engineRing ExerCise.” In *Proceedings of the 37th Annual International Conference on Research and Development in Information Retrieval (SIGIR 2014)*, pages 1147-1150, July 2014.

M. Petri, A. Moffat and J. S. Culpepper. “Score-safe term dependency processing with hybrid indexes.” In *Proceedings of the 37th Annual International Conference on Research and Development in Information Retrieval (SIGIR 2014)*, pages 899-902, July 2014.

M. Petri, J. S. Culpepper, and A. Moffat. “Exploring the Magic of WAND.” In *Proceedings of the 18th Annual Australasian Document Computing Symposium (ADCS 2013)*, pages 58-65,

December 2013.

M. Petri and J. S. Culpepper. “Efficient indexing algorithms for approximate pattern matching in text.” In *Proceedings of the 17th Annual Australasian Document Computing Symposium (ADCS 2012)*, pages 9-16, December 2012. *** Winner of the best paper award ***

S. Huston, J. S. Culpepper, and W. B. Croft. “Sketch-based indexing of n -words.” In *Proceedings of the 21st Annual International Conference on Information and Knowledge Management (CIKM 2012)*, pages 1864-1868, October 2012.

M. Yasukawa, J. S. Culpepper, and F. Scholer. “Phonetic matching in Japanese.” In *Proceedings of the SIGIR Workshop on Open Source Information Retrieval (OSIR 2012)*, pages 68-71, August 2012.

J. S. Culpepper, M. Petri, and F. Scholer. “Efficient in-memory top- k document retrieval.” In *Proceedings of the 35th Annual International Conference on Research and Development in Information Retrieval (SIGIR 2012)*, pages 225-234, August 2012.

J. S. Culpepper and M. Yasukawa and F. Scholer. “Language independent ranked retrieval with NeWT.” In *Proceedings of the 16th Australasian Document Computing Symposium (ADCS 2011)*, pages 18-25, Dec 2011.

M. Petri and G. Navarro and S. J. Puglisi and J. S. Culpepper. “Backwards search in context bound text transformations.” In *Proceedings of the First International Conference on Data Compression, Communications and Processing (CCP 2011)*, IEEE Press, pages 82-91, Jun 2011.

J. S. Culpepper and G. Navarro and S. Puglisi and A. Turpin. “Top- k ranked document search in general text databases.” In *Proceedings of the 18th Annual European Symposium on Algorithms (ESA 2010) Part II*, Sep 2010, pages 194–205, LNCS Volume 6347.

A. Turpin, F. Scholer, K. Jarvelin, M. Wu, and J. S. Culpepper. “Including summaries in system evaluation.” In *Proceedings of the 32nd Annual International Conference on Research and Development in Information Retrieval (SIGIR 2009)*, Boston, MA, USA, Jul 2009, pages 508–515.

A. Arakal, J. S. Culpepper, J. Jeffers, A. Turpin, S. Boztas, K. J. Horadam, and A. McKendrick. “Entropy of the retinal template.” In *Proceedings of the 3rd IAPR/IEEE International Conference on Biometrics (ICB 2009)*, Jun 2009, pages 1250–1259, LNCS Volume 5558.

A. Moffat and J. S. Culpepper. “Hybrid bitvector index compression.” In *Proceedings of the 12th Australasian Document Computing Symposium (ADCS 2007)*, Melbourne, Australia, December 2007, pages 25–37. *** Winner of the best paper award ***

J. S. Culpepper and A. Moffat. “Compact set representation for information retrieval.” In *Proceedings of the 14th International Symposium on String Processing and Information Retrieval (SPIRE 2007)*, Santiago, Chile, Oct 2007, pages 124–135, LNCS Volume 4726.

J. S. Culpepper and A. Moffat. “Phrase-based pattern matching in compressed text.” In *Proceedings of the 13th International Symposium on String Processing and Information Retrieval (SPIRE 2006)*, Glasgow, Scotland, Oct 2006, pages 337–345, LNCS Volume 4209.

J. S. Culpepper and A. Moffat. “Enhanced byte codes with restricted prefix properties.” In *Proceedings of the 12th International Symposium on String Processing and Information Retrieval (SPIRE 2005)*, Buenos Aires, Argentina, Nov 2005, pages 1–12, LNCS Volume 3772.

UNREFEREED
PAPERS

M. Yasukawa, J. S. Culpepper, F. Scholer, and M. Petri. “RMIT and Gunma Univeristy at NTCIR-9 Intent task.” In *Proceedings of the 9th NTCIR Workshop Meeting*, December 2011.

M. Yasukawa, J. S. Culpepper, F. Scholer, and M. Petri. “RMIT and Gunma Univeristy at

NTCIR-9 GeoTime task. ” In *Proceedings of the 9th NTCIR Workshop Meeting*, December 2011.

M. Petri, J. S. Culpepper, and F. Scholer. ”RMIT at TREC 2011 Microblog Track.” In *Proceedings of the 20th Text REtrieval Conference (TREC 2011)*, November 2011.

Students

Ph.D. Graduates

Gaya Jayasinghe, 2014. Thesis Title: “Evaluation with Uncertainty.”

Matthias Petri, 2013. Thesis Title: “Scalable succinct indexing for large text collections.”

Postdoctoral Advisor

Jianxin Li (current)

Ph.D. Advisor (current)

Farhana Murtaza Choudhury, Tadele Tadela Damessie, Xiaolu Lu

M.S. Minor Thesis Supervisor

Matthias Petri

Honours Thesis Supervisor

Joel MacKenzie