Alessandro Checco

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Education

- Ph.D. in Mathematics, Hamilton Institute — Feb 2015
  Design of decentralised algorithms applied to channel/code selection and convex optimisation for throughput fairness of 802.11 networks
- M.Sc. in Mathematical Engineering, University of Roma "Tor Vergata" — 2010
  110/110 with great distinction. Thesis on Monte Carlo Markov Chain methods for the approximate solutions of feature selection problems
- Erasmus Scholarship, Universiteit Gent, Department of Telecommunications — 2009
  Queuing Behaviour of Statistical Multiplexer with Spacing
- B.Sc. in Mathematical Engineering, University of Roma "Tor Vergata" — 2007
  110/110 with great distinction. Thesis on Wavelet analysis for recognition of form document images with complicated background

Research Experience

- Information School, University of Sheffield, Dr. Gianluca Demartini — 2017 – 2018
  Research Director of the H2020-funded project FashionBrain on Crowsourcing and recommender systems
- Information School, University of Sheffield, Dr. Gianluca Demartini — 2016
  Research Associate on the EPSRC-funded project BetterCrowd on Crowsourcing and recommender systems
- Science Foundation Ireland and Trinity College Dublin, Prof. Doug Leith — 2016
  Recipient of Technology Innovation Development Award (TIDA) 2016 on Privacy issues in recommender systems and probabilistic matrix factorisation
- Statistics and Computer Science Department, Trinity College Dublin, Prof. Doug Leith — 2015
  Postdoctoral Researcher on Privacy issues in recommender systems and probabilistic matrix factorisation

Selected Publications

Google Scholar ID: crhkrNcAAAAJ

[1] A. Checco, J. Bates, and G. Demartini, "Adversarial attacks on crowdsourcing quality control," *Journal of Artificial Intelligence Research*, vol. 67, pp. 375–408, 2020. [Online]. Available: https://www.jair.org/index.php/jair/article/view/11332.

[2] L. Han, E. Maddalena, A. Checco, C. Sarasua, U. Gadiraju, K. Roitero, and G. Demartini, "Crowd worker strategies in relevance judgment tasks," in *Proceedings of the 13th International Conference on Web Search and Data Mining*, 2020, pp. 241–249. [Online]. Available: https://dl.acm.org/doi/pdf/10.1145/3336191.3371857.

[3] R. Qarout, A. Checco, G. Demartini, and K. Bontcheva, "Platform-related factors in repeatability and reproducibility of crowdsourcing tasks," in *Proceedings of the AAAI Conference on Human Computation and Crowdsourcing*, vol. 7, 2019, pp. 135–143. [Online]. Available: https://www.aaai.org/ojs/index.php/HCOMP/article/download/5264/5116/.

[4] L. Han, K. Roitero, U. Gadiraju, C. Sarasua, A. Checco, E. Maddalena, and G. Demartini, "The impact of task abandonment in crowdsourcing," *IEEE Transactions on Knowledge and Data Engineering*, 2019. [Online]. Available: https://ieeexplore.ieee.org/document/8873609.

[5] C. Sarasua, A. Checco, G. Demartini, D. Difallah, M. Feldman, and L. Pintscher, "The evolution of power and standard wikidata editors: Comparing editing behavior over time to predict lifespan and volume of edits," *Computer Supported Cooperative Work (CSCW)*, vol. 28, no. 5, pp. 843–882, 2019. [Online]. Available: https://link.springer.com/content/pdf/10.1007/s10606-018-9344-y.pdf.

[6] D. Difallah, A. Checco, G. Demartini, and P. Cudré-Mauroux, "Deadline-aware fair scheduling for multi-tenant crowd-powered systems," *ACM Transactions on Social Computing*, vol. 2, no. 1, pp. 1–29, 2019. [Online]. Available: https://dl.acm.org/doi/pdf/10.1145/3301003.

[7] J. Otterbacher, A. Checco, G. Demartini, and P. Clough, "Investigating user perception of gender bias in image search: The role of sexism," in *The 41st International ACM SIGIR Conference on Research & Development in Information Retrieval*, ACM, 2018, pp. 933–936. [Online]. Available: https://dl.acm.org/doi/10.1145/3209978.3210094.

[8] A. Checco, J. Bates, and G. Demartini, "All that glitters is gold–an attack scheme on gold questions in crowdsourcing (best paper award)," in *Proceedings of the AAAI Conference on Human Computation and Crowdsourcing*, Sheffield, 2018. [Online]. Available: https://aaai.org/ocs/index.php/HCOMP/HCOMP18/paper/view/17925/16904.

[9] I. Chernushenko, F. A. Gers, A. Loeser, and A. Checco, "Crowd-labeling fashion reviews with quality control," *arXiv preprint arXiv:1805.09648*, 2018.

[10] A. Checco, C. Lancia, and D. Leith, "Updating neighbour cell list via crowdsourced user reports: A framework for measuring time performance," *Wireless Communications and Mobile Computing*, vol. 2018, 2018.

[11] A. Checco, A. Roitero, E. Maddalena, S. Mizzaro, and G. Demartini, "Let's agree to disagree: Fixing agreement measures for crowdsourcing," in *Proceedings of the Fifth AAAI Conference on Human Computation and Crowdsourcing (HCOMP-17)*, AAAI Press, 2017, pp. 11–20.

[12] B. Bellalta, A. Checco, A. Zocca, and J. Barcelo, "On the interactions between multiple overlapping WLANs using channel bonding," *IEEE Transactions on Vehicular Technology*, vol. 65, no. 2, pp. 796–812, 2016.

[13] B. Bellalta, A. Faridi, J. Barcelo, A. Checco, and P. Chatzimisios, "Channel bonding in short-range WLANs," in *European Wireless*, 2014. [Online]. Available: http://www.tecn.upf.es/~bbellalt/ChannelBondingShortRangeWLANs.pdf.

[14] B. Bellalta, A. Zocca, C. Cano, A. Checco, J. Barcelo, and A. Vinel, "Throughput analysis in CSMA/CA networks using continuous time markov networks: A tutorial," *arXiv preprint arXiv:1404.0180*, 2014. [Online]. Available: http://arxiv.org/pdf/1404.0180.

[15] B. Partov, D. J. Leith, and A. Checco, "Recommending access points to individual mobile users via automatic group learning," in *Communications (ICC), 2017 IEEE International Conference on*, IEEE, 2017, pp. 1–6.

[16] A. Checco, G. Bianchi, and D. J. Leith, "BLC: Private matrix factorization recommenders via automatic group learning," *ACM Transactions on Privacy and Security (TOPS)*, vol. 20, no. 2, 2017. [Online]. Available: https://arxiv.org/pdf/1509.05789.

[17] A. Checco and G. Demartini, "Pairwise, magnitude, or stars: What's the best way for crowds to rate?" *arXiv preprint arXiv:1609.00683*, 2016. [Online]. Available: https://arxiv.org/pdf/1609.00683.

[18] U. Gadiraju, A. Checco, N. Gupta, and G. Demartini, "Modus operandi of crowd workers: The invisible role of microtask work environments," *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*, vol. 1, no. 3, p. 49, 2017.

[19] A. Checco and D. J. Leith, "Fast, responsive decentralized graph coloring," *IEEE/ACM Transactions on Networking*, vol. 25, no. 6, pp. 3628–3640, 2017. [Online]. Available: https://arxiv.org/pdf/1405.6987.

[20] A. Checco and D. J. Leith, "Learning-based constraint satisfaction with sensing restrictions," *IEEE Journal of Selected Topics in Signal Processing*, vol. 7, pp. 811–820, 2013. [Online]. Available: http://arxiv.org/pdf/1210.7156.

[21] ——, "Fair virtualisation of 802.11 networks," *IEEE/ACM Transactions on Networking*, vol. to appear, 2013. [Online]. Available: http://ieeexplore.ieee.org/xpls/abs_all.jsp?arnumber=6689352.

[22] ——, "Proportional fairness in 802.11 wireless LANs," *IEEE Communications Letters*, vol. 15, no. 8, pp. 807–809, 2011. [Online]. Available: http://www.hamilton.ie/net/single-hop-propfair.pdf.

[23] A. Checco, R. Razavi, D. J. Leith, and H. Claussen, "Self-configuration of scrambling codes for WCDMA small cell networks," in *IEEE 23rd International Symposium on Personal Indoor and Mobile Radio Communications (PIMRC)*, IEEE, 2012, pp. 149–154. [Online]. Available: http://www.hamilton.ie/net/pimrc2012.pdf.

Industry Experience

- Intern, Bell Laboratories Ireland 2011 – 2012
  - Decentralised algorithms design for scrambling code selection in femtocell networks

Skills

Languages	Bash, C, C++, CSS, Matlab, JavaScript, Fortran, HTML, LaTeX, *Mathematica*, Python, R
Frameworks	Spark, Cloudera, Pandas, NumPy, SciPy, SimPy, scikit-learn
Algorithm design	Design, convergence rate and complexity analysis of decentralised algorithms on graphs
Convex optimisation	Convex optimisation, with application to discrete problems. Numerical methods for approximate solution of optimisation problems
Data Mining	Monte Carlo Markov chains techniques for data mining and feature selection
Privacy in recommender systems	Probabilistic matrix factorisation applied to recommender systems, with focus on privacy issues
Simulators	Event-based simulators design for wireless network analysis
Statistical inference	Bayesian modelling and exploratory data analysis, with focus on big data