# Alessandro Checco

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## Education

- Fellowship of Higher Education, The University of Sheffield 2020
  Higher Education Academy
- Ph.D. in Mathematics, Hamilton Institute 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, L. Bracciale, D. J. Leith, and G. Bianchi, "Opennym: Privacy preserving recommending via pseudonymous group authentication," *Security and Privacy*, e201, 2021.

[2] H. Xie, A. Checco, and E. D. Zamani, "Design principles and a conceptual framework for crowd teamwork systems," 2021.

[3] J. Bates, A. Checco, and E. Gerakopoulou, "Worker perspectives on designs for a crowdwork co-operative," in, J. Hepp and L. Kramp, Eds. Palgrave, forthcoming, ch. The Ambivalences of Data Power: New perspectives in critical data studies.

[4] A. Checco, L. Bracciale, P. Loreti, S. Pinfield, and G. Bianchi, "Ai-assisted peer review," *Humanities and Social Sciences Communications*, vol. 8, no. 1, pp. 1–11, 2021. [Online]. Available: https://www.nature.com/articles/s41599-020-00703-8.

[5] P. Abbott, A. Checco, and D. Polese, "Smart farming in sub-saharan africa: Challenges and opportunities.," in *SENSORNETS*, 2021, pp. 159–164. [Online]. Available: https://www.scitepress.org/Papers/2021/104167/104167.pdf.

[6] A. Checco and D. Polese, "Internet of trees: A vision for advanced monitoring of crops.," in *SENSORNETS*, 2020, pp. 182–186. [Online]. Available: https://www.scitepress.org/Papers/2020/93688/93688.pdf.

[7] S. Fan, U. Gadiraju, A. Checco, and G. Demartini, "Crowdco-op: Sharing risks and rewards in crowdsourcing," *Proceedings of the ACM on Human-Computer Interaction*, vol. 4, no. CSCW2, pp. 1–24, 2020. [Online]. Available: https://www.researchgate.net/profile/Ujwal-Gadiraju/publication/344547725_CrowdCO-OP_Sharing_Risks_and_Rewards_in_Crowdsourcing/links/5f7f63a0299bf1b53e1832f9/CrowdCO-OP-Sharing-Risks-and-Rewards-in-Crowdsourcing.pdf.

[8] L. Han, A. Checco, D. Difallah, G. Demartini, and S. Sadiq, "Modelling user behavior dynamics with embeddings," in *Proceedings of the 29th ACM International Conference on Information & Knowledge Management*, 2020, pp. 445–454. [Online]. Available: https://dl.acm.org/doi/abs/10.1145/3340531.3411985.

[9] 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.

[10] 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.

[11] 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/.

[12] 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.

[13] 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.

[14] 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.

[15] 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.

[16] 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.

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[18] 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.

[19] 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.

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[24] 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.

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[31] 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

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| Languages | Bash, C, C++, CSS, Matlab, JavaScript, Fortran, HTML, LaTeX, *Mathematica*, Python, R |
| Frameworks | Spark, Cloudera, Pandas, NumPy, SciPy, SimPy, scikit-learn, keras, pymc3 |
| 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 |