

Jens Winkelmann

PhD Researcher

Summary

Packing your luggage before you go on holidays or taking a jammed packed bus to work are just two occurrences of packing problems in our everyday life. During my PhD at Trinity College Dublin, I researched about **packing problems** by employing *optimisation algorithms*.

Previously, I pursuit a B.Sc. followed by a M.Sc. in Physics at TU Dortmund, Germany. Throughout my studies, I gained teaching experience in Dublin as well as in Dortmund and worked as a summer student in Jülich, Germany.

Experience

10/15 - Now PhD Researcher

Trinity College, University of Dublin, Ireland PhD in the Foams and Complex System Group.

- Applying optimisation algorithms (C/C++ and Python) to investigate packing problems
- · Collaborating with international researcher (from Ireland, UK, France, Germany, USA, China, Iran)
- · Maintaining the groups' website
- Demonstrator in 6 physics teaching labs in physics and tutor for 7 mathematical lectures
- Supervising 4 undergrad students with their final-year projects

6 peer-reviewed journal articles, 11 poster/presentation contributions at 9 international conferences (including at Cambridge, UK, Yale, USA)

10/13 - 09/15 Tutor

TU Dortmund, Germany

Teaching tutorials to Bachelor and Master students.

- · Preparing, correcting and presenting solutions of weekly guizzes
- Tutorials for the following lectures: Solid state physics, Theoretical physics for medical physicist, Computational physics

Valuable experience in *public speaking* and improving my *presenting skills*.

07/14 - 10/14 Summer research student

Forschungszentrum Jülich, Germany

IHRS BioSoft Guest Student in ICS-2

- Setting up hydrodynamic simulation about active matter in C/C++
- Running simulations on Linux-based High Performance Computers
- Data analysis with statistical measures in Python
- · Visualising data with Matplotlib/Python

Scientific report and presentations about "An active swimmer in a mesoscopic hydrodynamic simulation"

Education

2015 - 2019 **Ph.D. in Physics**

Trinity College, University of Dublin, Ireland PhD thesis in the Foams and Complex System Group. 17.5 Credit points in Teaching for Learning Assistants, Surface Science, Numerical Methods, and Scientific Computing.

2013 - 2015 M.Sc. Physics

TU Dortmund, Germany

Master thesis in Prof. Kierfeld's theoretical soft matter group. 134 Credit points in Theoretical Physics, Computational Physics, and Programming. Overall grade: 1.2

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Further infos

Date of birth: 18.03.91 Nationality: German

Online profiles

maths.tcd.ie/~jwinkelm bitbucket.org/jWinman/ researchgate.net/profile/ Jens Winkelmann linkedin.com/in/jenswinkelmann-685555168/

Comput. skills





Soft skills



 2010 - 2013
 B.Sc. Physics
 TU Dortmund, Germany

 182 Credit points in Physics, Mathematics, Numerics, and Programming.
 Overall grade: 1.4

 2001 - 2010
 Leaving Cert/Abitur
 Don-Bosco Gymnasium Essen, Germany

 Overall leaving certificate grade: 1.2
 Don-Bosco Gymnasium Essen, Germany

2007 - 2008 **Exchange school year** Northwest Rankin High School, Mississippi, USA High School Year in Brandon, Mississippi, USA

Awards

OS Preference MacOS ***** Linux ****

Languages German **** English ****

Hobbys Travel Indoor climbing

- 2015 2019 **IRC Postgraduate Scholarship** Irish Research Council (IRC) Government of Ireland Postgraduate Scholarship Programme. Highly competitive with average *success rate* of **19%** over last five years.
- 30/03/2019 **Rosse Medal Finalist** Institute of Physics in Ireland (IOP) Finalists during the annual Rosse Medal competition. Awarded for excellence in the communication of Physics.
- 08/09/2017 **Soft Matter Poster Prize** Sir Edwards Symposium, Cambridge, UK Award for best poster at the 2nd Sir Edwards Symposium: Challenges and Opportunities in Soft Matter, University Cambridge, UK

Publications

J. Winkelmann, A. Mughal, D. Weaire, S. Hutzler, Equilibrium configurations of hard spheres in a cylindrical harmonic potential, *EPL* status: under review.

F.F. Dunne, J. Winkelmann, D. Weaire, S. Hutzler. Implementation of Morse-Witten theory for a polydisperse wet 2D foam simulation, *Philos. Mag.* status: accepted for publication.

J. Winkelmann, A. Mughal, D.B. Williams, D. Weaire, S. Hutzler. Theory of rotational columnar structures of soft spheres, *Phys. Rev. E* **99** 020602(R) (2019)

A. Mughal, J. Winkelmann, D. Weaire, S. Hutzler. Columnar structures of soft spheres: Metastability and hysteresis, *Phys. Rev. E* **98** 043303 (2018)

J. Winkelmann, F.F. Dunne, V.J. Langlois, M.E. Möbius, D. Weaire, S. Hutzler. 2d foams above the jamming transition: Deformation matters, *Colloids Surf. A* **534** 52-57 (2017).

J. Winkelmann, B. Haffner, D. Weaire, A. Mughal, S. Hutzler. Simulation and observation of line-slip structures in columnar structures of soft spheres, *Phys. Rev. E* **96** 012610 (2017)

Certifications

10/03/2016 **IELTS English Test** Institute for English Studies, Dublin, Ireland Test score for the International English Language Test. *CEFR Level:* C1. *Overall score:* **7.5/9.0**.

August 19, 2019

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