Rianne van den Berg Curriculum Vitae

Personal information

Name:	Rianne van den Berg
Birthdate/-place:	26 January 1988, Delft
Nationality:	Dutch
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Work experience

2016 - present **Postdoctoral researcher in machine learning, University of Amsterdam**
My research focusses mainly on the application of deep learning methods to data with an irregular graph structure, such as recommender systems, knowledge graphs and social networks. I am currently involved in a project that aims at combining Bayesian deep learning with graph convolutional networks and contextual bandits. In a second project the focus lies on normalizing flows for variational inference.

2016 **Data science fellow, Science to Data Science, Pivigo**
During a 5 week workshop I worked in a team of 4 for the startup Waymarktech. Their core product revolves around automating the search for relevant financial regulations for their clients, and establishing the the actions a client needs to take to become compliant. We delivered a proof of principle of the ability to extract information from regulations using techniques from Natural Language Processing.

2012 - 2016 **PhD in theoretical physics, University of Amsterdam**
In my PhD I described the theory behind various experiments during three projects:

1. Quantum dots can act like quantum bits, the building blocks of a quantum computer. The project focused on the protection of a quantum dot from its environment, enabling a longer memory.
2. Modeling the interactions between atoms that were manipulated by a microscope, forming "handmade" patterns.
3. Modeling a quantum version of the Newton's cradle desk toy, with atoms colliding instead of metal spheres.

Teaching

2017 **Lecturer and coordinator of Machine Learning 1, University of Amsterdam**
Machine Learning 1 is a mandatory course of 6 ECTS for the Master's program in Artificial Intelligence.

2016 **Teaching assistent for Machine Learning, Amsterdam Business School**
Machine Learning is a course for the MBA Big Data & Business Analytics.

2012 - 2016 **Teaching Assistent in theoretical physics, University of Amsterdam**
Courses: Electrodynamics, Quantum Mechanics and Statistical Physics (2 semesters).

Education

2010 - 2012 **Delft University of Technology**
Master of Science in Applied Physics (average grade 8.5)
Casimir PrePhD track with 3 month research project at Northwestern University, IL, USA

2007 - 2010 **Utrecht University**
Bachelor of Science in Physics and Astronomy (average grade 8.0, *cum laude*, 33.75 additional ECTS)
Honours Program of Experimental Physics and Astronomy

2007 **Alliance Française de la Haye, The Hague**
DALF C1 (Diplôme Approfondi de Langue Française)/ French CEFRL C1 certificate

Honors and awards

2015 **Best Poster Prize**, *WEH-Seminar, Bad Honnef*
Workshop funded by the Wilhelm and Else Hereaus-Stiftung.

2014 **QM&QI Young Speaker's Prize**, *University of Amsterdam*
Quantum Matter and Quantum Information workshop.

2011 **Hendrik Casimir Prize**, *Casimir Research School*
Award for the best Master student.

Technical skills

Proficient: PYTHON, C++, Tensorflow, PyTorch, LaTeX
Intermediate: FORTRAN, MATHEMATICA, MATLAB

Languages

Dutch: Native
Engels: Fluent
French: Proficient
German: Basic

Personal interests

Sport climbing, hiking, running

Scientific publications

Graph Convolutional Matrix Completion
R. van den Berg, T.N. Kipf and M. Welling
*arXiv:*1706.02263 (2017)

Modeling Relational Data with Graph Convolutional Networks
M. Schlichtkrull, T.N. Kipf, P. Bloem, R. van den Berg, I. Titov and M. Welling
*arXiv:*1703.06103 (2017)

Atomic spin chain realization of a model for quantum criticality
R. Toskovic, R. van den Berg, A. Spinelli, I.S. Eliens, B. van den Toorn, B. Bryant, J.-S. Caux and A.F. Otte
Nat. Phys. **12** 656-660 (2016)

Separation of timescales in a quantum Newton's cradle
R. van den Berg, B. Wouters, I.S. Eliëns, J. De Nardis, R.M. Konik and J.-S. Caux
Phys. Rev. Lett. **116** 225302 (2016)

Competing interactions in semiconductor quantum dots
R. van den Berg, G.P. Brandino, O. El Araby, R.M. Konik, V. Gritsev and J.-S. Caux
Phys. Rev. B **90** 155117 (2014)

Probing paring correlations in Sn isotopes using richardson-Gaudin integrability
S. De Baerdemacker, V. Hellemans, R. van den Berg, J.-S. Caux, K. Heyde, M. Van Raemdonck, D. Van Neck and P. A. Johnson
Journal of Physics: Conference Series **533** 012058 (2014)