Thomas Kipf

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Education

- **University of Amsterdam** — Amsterdam, The Netherlands
  PhD candidate (current) — *since Apr 2016*
  Advisors: Max Welling (University of Amsterdam), Ivan Titov (University of Edinburgh)

- **University of Erlangen-Nuremberg** — Erlangen, Germany
  M.Sc. (honors) Physics — *Apr 2014 - Mar 2016*
  Graduated with distinction, GPA 3.97/4.0[1] (German grading system: 1.03)

- **University of Erlangen-Nuremberg** — Erlangen, Germany
  B.Sc. Physics — *Apr 2011 - Mar 2014*
  Graduated with distinction, GPA 3.93/4.0[1] (German grading system: 1.07)

Professional experience

- **Research Intern (DeepMind)** — London, UK
  Summer internship with Peter Battaglia (ongoing) — *Jun 2018 - Oct 2018*

- **Research Intern (Apple, Inc.)** — Seattle, WA
  Summer internship in Machine Learning team with Carlos Guestrin — *Jul 2017 - Sep 2017*
  I did research on integrating relative positional information in self-attention mechanisms and developed novel self-attention models for NLP applications in sequence tagging and classification.

- **Research Intern (Max Planck Institute for Brain Research)** — Frankfurt, Germany
  M.Sc. thesis in Connectomics Department with Moritz Helmstaedter — *Feb 2015 - Mar 2016*
  I developed a recurrent neural network-based model for edge classification in large graphs (using random walks) with applications in 3D electron microscopy image segmentation.

Publications

- <u>T. Kipf</u>*, E. Fetaya*, K. C. Wang, M. Welling, and R. Zemel, **Neural Relational Inference for Interacting Systems**, ICML (2018). *equal contribution.

- N. De Cao and <u>T. Kipf</u>, **MolGAN: An implicit generative model for small molecular graphs**, ICML Workshop on Theoretical Foundations and Applications of Deep Generative Models (2018).

- R. Selvan, <u>T. Kipf</u>, M. Welling, J. H. Pedersen, J. Petersen, M. de Bruijne, **Extraction of Airways using Graph Neural Networks**, MIDL Short Paper Track (2018).

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[1]Converted from German GPA using the *modified Bavarian formula*:
http://www.tum.de/en/studies/application-and-acceptance/grade-conversion-formula-for-grades-earned-outside-germany/

- T. R. Davidson*, L. Falorsi*, N. De Cao*, <u>T. Kipf</u>, J. M. Tomczak, **Hyperspherical Variational Auto-Encoders**, UAI (2018), **Plenary Talk**. *equal contribution.

- R. van den Berg, <u>T. N. Kipf</u>, and M. Welling, **Graph Convolutional Matrix Completion**, KDD Deep Learning Day (2018), **Spotlight Talk**.

- M. Schlichtkrull*, <u>T. N. Kipf</u>*, P. Bloem, R. van den Berg, I. Titov, and M. Welling, **Modeling Relational Data with Graph Convolutional Networks**, ESWC (2018), **Best Student Research Paper**. *equal contribution.

- <u>T. N. Kipf</u> and M. Welling, **Semi-Supervised Classification with Graph Convolutional Networks**, ICLR (2017).

- <u>T. N. Kipf</u> and M. Welling, **Variational Graph Auto-Encoders**, NIPS Workshop on Bayesian Deep Learning (2016).

Full list: `http://scholar.google.com/citations?user=83HL5FwAAAAJ`

Invited talks

- *(upcoming)* UCLA Institute for Pure and Applied Mathematics (Workshop speaker) . . May, 2019
- GTN Ltd. London . . . . June 22, 2018
- University of Cambridge (Engineering Dept.) . . . . June 21, 2018
- Babylon Health London . . . . June 20, 2018
- MINES ParisTech (Centre for Computational Biology) . . . . June 14, 2018
- University of Cambridge (Computer Science Dept.) . . . . May 25, 2018
- University of Oxford (Statistics Dept.) . . . . Oct 31, 2017
- London Machine Learning Meetup . . . . Oct 30, 2017
- SAP Innovation Center Potsdam . . . . Oct 19, 2017
- Stanford University (Computer Science Dept.) . . . . Oct 3, 2017
- Amsterdam Deep Learning & AI Meetup by Scyfer (now Qualcomm) . . . . May 10, 2017
- Machine Learning Netherlands Meetup by IMC Amsterdam . . . . Apr 6, 2017
- INRIA Nancy, France . . . . Mar 22, 2017
- VU University Medical Center Amsterdam . . . . Mar 6, 2017
- INRIA Lille, France . . . . Dec 15, 2016

Awards, grants and honours

- ICML 2018: **Outstanding reviewer** (top 100) 2018
- ESWC 2018: **Best student research paper award** 2018
- ICLR 2017 & ICML 2018 travel award . . . . 2017 / 2018
- CIFAR travel scholarship for Deep Learning Summer School 2016
- Full scholarship by the German National Academic Foundation (€25 500) . . . . . . 2013 - 2016
- Deutschlandstipendium (Germany Scholarship) (€7 200) . . . . 2011 - 2013

Workshops and summer schools

- **Machine Learning Summer School 2017** — Tübingen, Germany
  Summer school participation; poster presentation — *June 19-30, 2017*
- **Google Machine Learning Summit 2017** — Zürich, Switzerland
  Selected for participation (86 PhD students/post-docs); poster presentation — *June 12-14, 2017*
- **Deep Learning Summer School 2016** — Montreal, Canada
  Summer school participation; selected for poster presentation — *Aug 1-7, 2016*

Student supervision

- **Nicola De Cao (Master thesis, jointly with Max Welling)** — University of Amsterdam
  Deep Generative Models for Graphs — *Graduation: Sep 6, 2018*
- **Mart van Baalen (Master thesis, jointly with Max Welling)** — University of Amsterdam
  Deep Matrix Factorization for Recommendation — *Graduation: Oct 14, 2016*

Selected course work (prior to PhD studies)

- **Mathematics & Physics:**
  - Analysis and Linear Algebra
  - Experimental Physics I - VI
  - Theoretical Physics I - V
- **Computer Science & Statistics:**
  - Computational Physics I - II
  - Complex Systems I - III
  - Bioinformatics/-statistics

Miscellaneous

- **Teaching (TA):**
  - Machine Learning I, 2016 & 2018 (Master AI, University of Amsterdam)
  - Introduction to Machine Learning, 2017 (Bachelor AI, University of Amsterdam)

- **Reviewer activity:**
  - **Conferences**: ECCV 2016, ICLR 2018, ICML 2018, NIPS 2018
  - **Journals**: IEEE Transactions on Neural Networks and Learning Systems (TNNLS), IEEE Transactions on Signal Processing (TSP), IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)

- **Blog posts:**
  - Building Models that Learn to Discover Structure and Relations (Jul 2018)
  - Graph Convolutional Networks (Sep 2016)

- **Open source contributions:** See `https://github.com/tkipf`.