

# Thomas Kipf

Senior Research Scientist, Google Research, Amsterdam

web: [tkipf.github.io](https://tkipf.github.io)

## Professional Experience

- **Google Research** Amsterdam, The Netherlands  
*Senior Research Scientist (Brain Team)* from May 2022
- **Google Research** Amsterdam, The Netherlands  
*Research Scientist (Brain Team)* Jan 2020 - Apr 2022
- **DeepMind Technologies Ltd.** London, UK  
*Research Intern* Jun 2018 - Oct 2018
- **Apple Inc.** Seattle, WA  
*Research Intern* Jul 2017 - Sep 2017
- **Max Planck Institute for Brain Research** Frankfurt, Germany  
*Research Intern* Feb 2015 - Mar 2016

## Education

- **University of Amsterdam** Amsterdam, The Netherlands  
*PhD (highest distinction “cum laude”) Computer Science* Apr 2016 - Apr 2020  
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 (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 (German grading system: 1.07)

## Selected Publications

- G. F. Elsayed\*, A. Mahendran\*, S. van Steenkiste\*, K. Greff, M. C. Mozer, T. Kipf\*, **SAVi++: Towards End-to-End Object-Centric Learning from Real-World Videos**, NeurIPS (2022).  
\*equal contribution.
- M. S. M. Sajjadi, D. Duckworth\*, A. Mahendran\*, S. van Steenkiste\*, F. Pavetić, M. Lučić, L. J. Guibas, K. Greff, T. Kipf\*, **Object Scene Representation Transformer**, NeurIPS (2022).  
\*equal contribution.
- T. Kipf\*, G. Elsayed\*, A. Mahendran\*, A. Stone\*, S. Sabour, G. Heigold, R. Jonschkowski, A. Dosovitskiy, K. Greff, **Conditional Object-Centric Learning from Video**, ICLR (2022).  
\*equal contribution.
- K. Greff, F. Belletti, L. Beyer, C. Doersch, Y. Du, D. Duckworth, D. J. Fleet, D. Gnanaprasagam, F. Golemo, C. Herrmann, T. Kipf, A. Kundu, D. Lagun, I. Laradji, et al., **Kubric: A scalable dataset generator**, CVPR (2022).

- F. Locatello\*, D. Weissenborn, T. Unterthiner, A. Mahendran, G. Heigold, J. Uszkoreit, A. Dosovitskiy, T. Kipf\*, **Object-centric Learning with Slot Attention**, NeurIPS (2020), *Spotlight*. \*equal contribution.
- T. N. Kipf, **Deep Learning with Graph-Structured Representations**, PhD Thesis (2020).
- E. van der Pol, T. Kipf, F. A. Oliehoek, and M. Welling, **Plannable Approximations to MDP Homomorphisms: Equivariance under Actions**, AAMAS (2020).
- T. Kipf, E. van der Pol, and M. Welling, **Contrastive Learning of Structured World Models**, ICLR (2020), *Oral*.
- T. Kipf, Y. Li, H. Dai, V. Zambaldi, A. Sanchez-Gonzalez, E. Grefenstette, P. Kohli, and P. Battaglia, **CompILE: Compositional Imitation Learning and Execution**, ICML (2019), *Long Oral*.
- A. Kipf, T. Kipf, B. Radke, V. Leis, P. Boncz, and A. Kemper, **Learned Cardinalities: Estimating Correlated Joins with Deep Learning**, CIDR (2019).
- T. Kipf\*, E. Fetaya\*, K. C. Wang, M. Welling, and R. Zemel, **Neural Relational Inference for Interacting Systems**, ICML (2018). \*equal contribution.
- N. De Cao and T. Kipf, **MolGAN: An implicit generative model for small molecular graphs**, ICML Workshop on Theoretical Foundations and Applications of Deep Generative Models (2018).
- T. R. Davidson\*, L. Falorsi\*, N. De Cao\*, T. Kipf, and J. M. Tomczak, **Hyperspherical Variational Auto-Encoders**, UAI (2018), *Plenary Talk*. \*equal contribution.
- M. Schlichtkrull\*, T. N. Kipf\*, 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.
- T. N. Kipf and M. Welling, **Semi-Supervised Classification with Graph Convolutional Networks**, ICLR (2017).

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

## Awards and Scholarships

- ELLIS PhD Award . . . . . 2021
- Elected as ELLIS Scholar . . . . . 2021
- NeurIPS 2021 Outstanding Reviewer Award . . . . . 2021
- Highest PhD thesis distinction “cum laude” at University of Amsterdam . . . . . 2020
- Best Student Research Paper Award (ESWC 2018) . . . . . 2018
- Full scholarship by the German Academic Scholarship Foundation (Studienstiftung) . 2013 - 2016

## Miscellaneous

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

- **Student supervision:**
  - **M.Sc. thesis supervision:** Daniel Daza (2019, UvA), Davide Belli (2019, UvA), Nicola De Cao (2018, UvA), Mart van Baalen (2016, UvA)
  - **PhD interns:** Francesco Locatello (2020, Google), Sindy Löwe (2020, Google), Ondrej Biza (2022, Google)
- **Community service:**
  - **Reviewer:** ECCV 2016, ICLR 2018, ICML 2018, NeurIPS 2018, ICML 2019, ISWC 2019, NeurIPS 2019, ICLR 2020, ICML 2020, NeurIPS 2020, ICLR 2021, NeurIPS 2021, JMLR, ICLR 2022, NeurIPS 2022
  - **Area Chair:** ICLR 2021, LoG 2022, ICLR 2023
- **Workshop co-organization:**
  - Workshop on Neuro Causal and Symbolic AI (NeurIPS 2022)
  - Workshop on the Elements of Reasoning: Objects, Structure, and Causality (OSC) (ICLR 2022)
  - ELLIS Workshop on Geometric and Relational Deep Learning (Amsterdam 2020)
  - Workshop on Graph Representation Learning (NeurIPS 2019)
  - Workshop on Deep Learning on Graphs: Methods and Applications (KDD 2019)
  - Workshop on Learning and Reasoning with Graph-Structured Data (ICML 2019)
  - Workshop on Representation Learning on Graphs and Manifolds (ICLR 2019)
  - ELLIS@ICML Workshop (ICML 2018)
- **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>.