

Elise van der Pol

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EDUCATION

- **PhD in Machine Learning** 2017-Now
University of Amsterdam (UvA)
Structure in Deep Reinforcement Learning, *with Prof. Dr. Max Welling and Dr. Herke van Hoof*
Highlights: Publications in NeurIPS (2×), ICLR, and AAMAS.
- **MSc in Artificial Intelligence** (Cum Laude) 2014-2016
University of Amsterdam
Coordination for Deep Reinforcement Learning in Traffic Light Control, *with Dr. Frans Oliehoek*
Highlights: Thesis published at NeurIPS 2016 workshops (170+ citations combined).
- **BSc in Artificial Intelligence** 2009-2014
University of Amsterdam
Evolution of moral behavior in multi-agent systems, *with Dr. Bert Bredeweg*

RESEARCH VISITS

- **DeepMind** (London, UK) Planned in 2021
with Dr. Yoram Bachrach
- **Microsoft Research** (Cambridge, UK) Planned in 2021
with Dr. Sam Devlin and Dr. Katja Hofmann
- **Bosch Center for Artificial Intelligence** (Renningen, DE) 2018, 2019, 2020
with Dr. Michael Herman

TALKS

- **Invited talk** - Cluster of Excellence Machine Learning (Tuebingen, DE) 2020
MDP Homomorphic Networks
- **Invited talk** - Deep Learning Practitioners (Delft/Leiden, NL) 2020
Equivariance, Deep Reinforcement Learning, and making it work
- **Invited talk** - AI in Practice (TU Delft) 2020
Data-efficient Reinforcement Learning
- **Two invited talks** - Bosch Center for Artificial Intelligence (Renningen, DE) 2018, 2019
Deep Latent Planning (2018), *Hyperspherical Prototype Networks* (2019)
- **Invited talk** - ICAI CEO Dinner (Amsterdam, NL) 2018
Introduction to Reinforcement Learning

TEACHING

- **Guest Lectures**
 - *Applied Machine Learning (MSc Data Science)* - Introduction to Reinforcement Learning 2020
 - *Datastructures (BSc Beta-Gamma)* - Deep Reinforcement Learning 2016
- **Teaching Assistant**
 - *Reinforcement Learning (MSc Artificial Intelligence)* - Teaching tutorials, labs 2018, 2019
 - *Multiple courses (BSc Artificial Intelligence)* - Teaching tutorials, labs 2011-2017
(*Machine Learning, Robotics, Linear Algebra, Logic, Natural Language Processing*)
- **Supervision**
6 theses and projects in the Bachelor's and Master's Artificial Intelligence at UvA.

ACADEMIC SERVICE

- 10+ reviewer for international venues ICML, NeurIPS, AAAI's CoMARL, and JAAMAS.
- Top reviewer acknowledgment for ICML 2020.

VOLUNTEERING

- **Inclusive AI** (<https://uva-iai.github.io>)
Initiative to support AI MSc students from underrepresented groups. 2018-Now
- **VHTO** (<https://vhto.nl>)
Programming workshops and STEM career advice for girls. 2014-Now
- **VIA** (<https://svia.nl>)
Chairman of the board of the association for Computer Science students at UvA. 2011

WORK EXPERIENCE

- **Research Assistant** - Unsupervised Learning for Wafer Error Analysis -
with Sunny Kim (Samsung), Jorn Peters & Prof. Dr. Max Welling (UvA) 2016 - 2017
- **Web Developer, Teacher** - Python, Django, HTML/CSS, Javascript - *Perceptum* 2012 - 2016
- **FrontEnd Developer** - HTML/CSS - *Career Advice Center, UvA* 2012 - 2013

MEDIA

- **NOS Nieuwsuur interview** 30/09/2018
Interview with Dutch news regarding the AI 'braindrain' in the Netherlands.
- **NOS.nl interview** 16/07/2018
Interview with Dutch news regarding AI and industry.

PROGRAMMING

- Experience with Python, Pytorch, TensorFlow, HTML/CSS, Javascript

PUBLICATIONS

1. E. van der Pol, D.E. Worrall, H. van Hoof, F.A. Oliehoek, M. Welling. MDP Homomorphic Networks: Group Symmetries in Reinforcement Learning. **NeurIPS**. 2020.
 2. E. van der Pol, T. Kipf, F.A. Oliehoek, M. Welling. Plannable Approximations to MDP Homomorphisms: Equivariance under Actions. **AAMAS**. 2020.
 3. T. Kipf, E. van der Pol, M. Welling. Contrastive Learning of Structured World Models. **ICLR**. 2020.
 4. P. Mettes, E. van der Pol, C.G.M. Snoek. Hyperspherical Prototype Networks. **NeurIPS**. 2019.
 5. L. Weitkamp, E. van der Pol, Z. Akata. Visual Rationalizations in Deep Reinforcement Learning for Atari Games. **BNAIC**. 2018.
 6. F. A. Oliehoek, R. Savani, J. Gallego-Posada, E. van der Pol, R. Groß. Beyond Local Nash Equilibria for Adversarial Networks. **Benelearn**. 2018.
 7. F. A. Oliehoek, R. Savani, J. Gallego-Posada, E. van der Pol, E. D. de Jong, R. Groß. GANGs: Generative Adversarial Network Games. *Arxiv Preprint*. <https://arxiv.org/abs/1806.07268>. 2018.
 8. E. van der Pol, F. A. Oliehoek. Coordinated Deep Reinforcement Learners for Traffic Light Control. **NeurIPS workshops**. 2016.
 9. E. van der Pol, S. Gieske, R. Fernández. Linguistic Style Accomodation in Disagreements. ***SEM**. 2016.
 10. S. Gieske, E. van der Pol, U. Endriss. Empirical Evaluation of Collective Rationality for Quota Rules in Judgment Aggregation. **BNAIC**. 2015.
- Three patent applications submitted to the German patent office.