

# Elise van der Pol

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## EDUCATION

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- **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 workshop (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

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

## TALKS

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- **Invited talk** - University of Tuebingen, DE 2020  
*MDP Homomorphic Networks for Deep Reinforcement Learning*
- **Invited talk** - Deep Learning Practitioners, University of Leiden, NL 2020  
*Equivariance, Deep Reinforcement Learning, and making it work*
- **Invited talk** - AI in Practice, TU Delft, NL 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

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- **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

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

## VOLUNTEERING

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- **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

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- **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

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- **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

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

## PUBLICATIONS

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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 workshop**. 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.