Elise van der Pol

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Education

- **PhD in Machine Learning** 2017-Now
  University of Amsterdam (UvA)
  Structure & Symmetry in Deep RL, *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 (200+ 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) June 2021
  Internship with Dr. Yoram Bachrach
- **Bosch Center for Artificial Intelligence** (Renningen, DE) 2018, 2019, 2020
  with Dr. Michael Herman

Talks

- **Keynote** - ICLR Workshop on Self-supervision for Reinforcement Learning 2021
  Structure, Symmetry, and Equivariance in Deep Reinforcement Learning
- **Invited talk** - University of Tuebingen, DE 2020
  MDP Homomorphic Networks for Deep Reinforcement Learning
- **Invited talk** - Deep Learning Practitioners, Leiden University, 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

- **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

- Organization of an ICLR 2021 social
- 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 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.