Andrii Zadaianchuk

andrii.zadaianchuk@tuebingen.mpg.de
+49 1711567592

Education

ETH Zürich, Switzerland **04.2019 - 09.2023**
Ph.D. Student, Max Planck ETH Center for Learning Systems
Unsupervised object-centric representation learning for autonomous control

Universität Tübingen, Germany **10.2016 - 09.2018**
M.Sc., Graduate Training Centre of Neural Information Processing
GPA: 1.1/1.0

Moscow Institute of Physics and Technology, Russia **09.2012 - 08.2016**
B.Sc., Applied Mathematics and Physics
GPA: 4.89/5.0

Experience

Bridging the Gap to Real World Object-Centric Learning / Amazon **05.2022 - 11.2022**
Significantly improved current state of the art in object-centric learning by combining it with contrastive representation learning. Contributed to initial idea, baselines, experiments, and writing.

Unsupervised Semantic Segmentation with Self-supervised Object-centric Representations / Amazon **09.2021 - 02.2022**
Explored properties of state-of-the-art self-supervised representations and combined it with unsupervised saliency segmentation methods for object categories discovery and unsupervised semantic segmentation (+12 mIoU on PASCAL VOC).

RL self-supervision with Independently Controllable Subgoals / ETHZ **01.2021 - 07.2021**
Improved multi-object manipulation task (up to 6 objects rearrangement) by discovering independently controllable components with sparse GNN dynamics model

Self-supervised Visual RL with Object-centric Representations / MPI IS **06.2020 - 10.2020**
Developed autonomous RL agent that learns SotA policies in visual multi-object rearrangement and pushing tasks without a reward signal by incorporating object-centric representations and attention based goal-conditioned policies

Online Step Size Adaptation for Stochastic Optimization / MPI IS **01.2018 - 08.2018**
Developed quadratic step-size adaptation method with 10 times less sensitive hyperparameters by using quadratic approximation and proximal point methods

Awards and Leadership

Awarded **DAAD scholarship** (25/600 applicants) due to clear objectives and academic achievements **08.2016 - 09.2018**

Tutored **Deep Learning** course (with up to 400 students) **10.2020 - 01.2021**
ETH Zürich, Switzerland

Tutored **Intoduction in Machine Learning** course (with up to 1300 students) **01.2021 - 05.2021**
ETH Zürich, Switzerland

Publications

Object-Centric Learning for Real-World Videos by Predicting Temporal Feature Similarities
Submitted, 2023
Andrii Zadaianchuk, Maximilian Seitzer, Georg Martius

Unsupervised Semantic Segmentation with Self-supervised Object-centric Representations
International Conference on Learning Representations, 2023 (spotlight presentation)
Andrii Zadaianchuk, Matthäus Kleindessner, Yi Zhu, Francesco Locatello, Thomas Brox

Bridging the Gap to Real World Object-Centric Learning
International Conference on Learning Representations, 2023
Maximilian Seitzer, Max Horn, **Andrii Zadaianchuk**, Dominik Zietlow, Tianjun Xiao, Carl-Johann Simon-Gabriel, Tong He, Zheng Zhang, Bernhard Schölkopf, Thomas Brox, Francesco Locatello

Self-supervised Reinforcement Learning with Independently Controllable Subgoals
Conference on Robot Learning, 2021
Andrii Zadaianchuk, Georg Martius, Fanny Yang

Self-supervised Visual Reinforcement Learning with Object-centric Representations
International Conference on Learning Representations, 2021 (spotlight presentation)
Andrii Zadaianchuk, Maximilian Seitzer, Georg Martius

Unsupervised Learning of Independently Controllable Dynamic Components
ICML Object-Oriented Learning (OOL): Perception, Representation, and Reasoning Workshop, 2020
Andrii Zadaianchuk, Georg Martius

A New Robotic Dataset for Transferable Dynamics Learning
International Conference on Robotics and Automation, 2020
Diego Alejandro Agudelo-España, **Andrii Zadaianchuk**, Philippe Wenk, Aditya Garg, Joel Akpo, Felix Grimminger, Julian Viereck, Maximilien Naveau, Ludovic Righetti, Georg Martius, Andreas Krause, Bernhard Schölkopf, Stefan Bauer, Manuel Wüthrich

Selection of optimal physical activity classification model using measurements of accelerometer
Information Technologies, 2016, 22(4) : 313-328.
Andrii Zadaianchuk, Mariia Popova, Vadim Strijov