

Vlad Sobal

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Education

PhD in Data Science, New York University

New York, NY

NYU Center for Data Science, advised by professors Yann LeCun and Kyunghyun Cho

Sep. 2019 – present

Working on representation learning, model-based planning, joint-embedding predicting architectures (JEPA).

BSc in Computer Science, University of Warsaw

Warsaw, Poland

Faculty of Mathematics, Informatics, and Mechanics

Oct. 2015 – May 2019

Thesis topic: Feature Space Augmentations for Object Classification and Detection.

Publications

- **Learning from Reward-Free Offline Data: A Case for Planning with Latent Dynamics Models**
Vlad Sobal, Wancong Zhang, Kyunghyun Cho, Randall Balestrieri, Tim G. J. Rudner, Yann LeCun
(Under review)
<https://latent-planning.github.io/>
- **X-Sample Contrastive Loss: Improving Contrastive Learning with Sample Similarity Graphs**
Vlad Sobal, Mark Ibrahim, Randall Balestrieri, Vivien Cabannes, Diane Bouchacourt, Pietro Astolfi, Kyunghyun Cho, Yann LeCun
(The International Conference on Learning Representations 2025)
<https://arxiv.org/abs/2407.18134>
- **Hierarchical World Models as Visual Whole-Body Humanoid Controllers**
Nicklas Hansen, Jyothir S V, Vlad Sobal, Yann LeCun, Xiaolong Wang, Hao Su
(The International Conference on Learning Representations 2025)
<https://arxiv.org/abs/2405.18418>
- **Gradient-based Planning with World Models**
Jyothir S V, Siddhartha Jalagam, Yann LeCun, Vlad Sobal
(Generative Models for Decision Making Workshop at ICLR 2024)
<https://arxiv.org/abs/2312.17227>
- **A cookbook of self-supervised learning**
Randall Balestrieri, Mark Ibrahim, Vlad Sobal *et. al.* (contributed a chapter on RL)
(2023, ArXiv preprint)
<https://arxiv.org/abs/2304.12210>
- **Light-weight probing of unsupervised representations for reinforcement learning**
Wancong Zhang, Anthony GX-Chen, Vlad Sobal, Yann LeCun, Nicolas Carion
(2023, Reinforcement Learning Conference 2024)
<https://arxiv.org/abs/2208.12345>
- **Joint embedding predictive architectures focus on slow features**
Vlad Sobal, Jyothir SV, Siddhartha Jalagam, Nicolas Carion, Kyunghyun Cho, Yann LeCun
(Self-Supervised Learning - Theory and Practice Workshop, NeurIPS 2022)
<https://arxiv.org/abs/2204.07184>
- **Separating the World and Ego Models for Self-Driving**
Vlad Sobal, Alfredo Canziani, Nicolas Carion, Kyunghyun Cho, Yann LeCun
(Generalizable Policy Learning in the Physical World Workshop at ICLR 2022)
<https://arxiv.org/abs/2204.07184>

Experience

Meta AI Research

October 2022 - October 2024

Visiting Researcher with Mikael Henaff and Yann LeCun

New York, NY

- Working on learning representations and world models for robotic manipulation tasks using joint-embedding predictive architectures (JEPAs).

NVIDIA

June 2021 - December 2021

Deep Learning Research Intern

Remote

- Applying joint-embedding methods to pre-train autonomous vehicles perception models.

NVIDIA

May 2019 - August 2019

Software Engineering Intern with Autonomous Vehicles Perception team

Santa Clara, CA

- Contributed to C++ pipeline for intersection bounding box processing.
- Built a model to classify digital traffic signs.

Jane Street Europe

July 2018 - September 2018

Software Engineering Intern with Trading Systems team

London, UK

- Working on Jane Street trading systems' price processing pipeline built with OCaml.

NVIDIA

March 2018 - June 2018

Software Engineering Intern with Autonomous Vehicles SDK team

Santa Clara, CA

- Built a tool to monitor pipeline throughput for autonomous vehicle's sensor data.

NVIDIA

October 2017 - March 2018

Software Engineering Intern with GPU Cloud team (NGC)

Santa Clara, CA

- Contributed to the front-end and back-end of communication system for GPU cluster (Python), making dataset upload up to 10 times faster.

Google

July 2017 - October 2017

Software Engineering Intern with Google Ads team

Mountain View, CA

- Built a logs analysis pipeline for dynamically generated ads using Go.

Google

July 2016 - September 2016

Software Engineering Intern with Google Maps for iOS team

Zurich, Switzerland

- Worked on permission notification system for Timeline feature of iOS app for Google Maps (Objective C).

Service

Reviewer: NeurIPS Goal-Conditioned RL workshop 2023, NeurIPS 2023, ICML 2023, ICLR 2024

Teaching Assistant: NYU Deep Learning class Spring 2021, Spring 2022

Volunteer: ICML 2022