# Vlad Sobal

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## About

I'm a PhD student interested in autonomous vehicles and reinforcement learning, particularly model-based. I'm also interested in self-supervised learning for vision and RL, and unsupervised exploration in RL.

## 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 applying model-based planning, joint-embedding predciting 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

- **A cookbook of self-supervised learning**
  Randall Balestriero, Mark Ibrahim, **Vlad Sobal** *et. al.* (contributed a chapter on RL)
  (2023, ArXiV preprint)

- **Light-weight probing of unsupervised representations for reinforcement learning**
  Wancong Zhang, Anthony GX-Chen, **Vlad Sobal**, Yann LeCun, Nicolas Carion
  (2023, ArXiV preprint)

- **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)

- **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)

## Experience

**Meta AI Research**                                         October 2022 - Present
*Visiting Researcher with Mikael Henaff and Yann LeCun*          New York, NY
- Working on Laplacian representations for planning, and on 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