



Nikita Dvornik

PhD in computer vision and machine learning

Education

- 2016–2019 **PhD in Computer Vision and Machine Learning**, *Thoth team*, Inria Grenoble. Supervised by Julien Mairal and Cordelia Schmid. Studying object-level scene understanding and learning with limited annotated data.
- 2015–2016 **Masters in Data Science**, *University of Grenoble & Ensimag*, Grenoble, France.
- 2010–2014 **Bachelor in Applied Math**, *Moscow Institute of Physics and Technology*, Moscow, Russia.

Publications

- ICCV 2019 **Diversity with Cooperation: Ensemble Methods for Few-Shot Classification.**
by Nikita Dvornik, Cordelia Schmid and Julien Mairal
- TPAMI 2019 **On the Importance of Visual Context for Data Augmentation in Scene Understanding.**
by Nikita Dvornik, Julien Mairal and Cordelia Schmid
- ECCV 2018 **Modeling Visual Context is Key to Augmenting Object Detection Datasets.**
by Nikita Dvornik, Julien Mairal and Cordelia Schmid
- ICCV 2017 **BlitzNet: A Real-Time Deep Network for Scene Understanding.**
by Nikita Dvornik, Konstantin Shmelkov, Julien Mairal and Cordelia Schmid

Software

For each research project I have open sourced the code. It allows to reproduce published results and easily use our methods for further research.

- **BlitzNet: Real-time Object Detection and Semantic Segmentation.**
— github.com/dvornikita/blitznet
A real-time scene understanding pipeline with state-of-the-art performance. The repo includes the code for training, inference and a demo with interface.
- **Copy-paste Data Augmentation with Context Modeling.**
— github.com/dvornikita/context_da
The repo implements copy-paste data augmentation with context guidance and provides plug-and-play data augmentation module for training a scene understanding model.

- **Diversity with Cooperation: Ensemble Methods for Few-Shot Classification.**
— github.com/dvornikita/fewshot_ensemble
The full pipeline to train and distill ensembles for few-shot learning. The repo contains the diversity- and cooperation-based training and robust prototype classifiers implementation.

Previous experience

- 2017 **Computer Vision Engineer**, *Teleport inc*, Moscow, Russia.
Designing and Implementing methods for real-time semantic image and video segmentation.
- 2016 **Research Internship in Computer Vision**, *Thoth team*, Inria Grenoble, France.
Supervised by Julien Mairal, Cordelia Schmid and Florent Perronnin
Studying equivariant deep image representations and global image descriptors for instance-level image retrieval.
- 2014 **Summer Intern**, *Deloitte*, Moscow, Russia.
Working in Legal & IT department. Optimizing database uploading system.
- 2011 **Summer Intern**, *Itima*, Moscow, Russia.
Working as a web developer.

Awards

- 2014 National Final of Henkel Business Challenge - top entry
- 2010 University Math and Physics competitions - 2st place
- 2010 Regional Math and Physics competitions - top entry

Computer skills

Languages Python, Matlab, R, C++, Bash
Others Unix, SQL

Languages

Native **Russian, Belorussian**
Fluent **English**
Basic **French, Spanish**