

Victor Prokhorov

Updated October 22, 2023

Email: victorprokhorov91@gmail.com

GitHub

Personal Page

Research Summary

My research focuses on representation learning for text and images. The research question that I have been asking is whether it is beneficial to learn latent representations of the modalities with certain properties i.e. sparsity, interpretability, semantic constraints e.g semantics from graphs etc. In the past few years, the models I have been working on are Variational Autoencoders. I also have experience with various neural network architectures: Transformers, RNNs, CNNs.

Work experience

University of Edinburgh

Edinburgh, UK

Research Associate (Host: N. Siddharth, Ivan Titov) April 2022 - April. 2024
Project ([learning of interpretable representation of images and text](#)): instead of learning the representations for the modalities in the dense distributed vector the goal of the project is to learn the representations for the modalities in the image space.

Montreal Institute for Learning Algorithms (MILA), Montreal, Canada
Internship (Host: Siva Reddy) Sep.- Dec. 2020

Project (symbolic representations for text): instead of pretraining a model to learn distributed representation of text which has been proven useful in transfer learning setup, in the project we aimed to induce reusable symbolic representation of text.

Education

University of Cambridge

Cambridge, UK

PhD in Computation, Cognition and Language 2017 – 2021

[Thesis: Injecting inductive Biases into Distributed Representation of Text](#)

Supervisors: N. Collier, E. Shareghi

University of Cambridge

Cambridge, UK

MPhil in Advanced Computer Science 2016 – 2017

Supervisors: N. Collier, P. Lio, T. Pilehvar Distinction

University of Bristol

Bristol, UK

BEng in Computer Science and Electronics 2013 – 2016

Supervisor: N. Dahnoun First Class (Hons)

Grants

Mitacs Globalink Research (Mitacs, Awarded;has not been accepted) 2020
Student Travel Grant (Workshop: Neural Generation and Translation) 2019

Representative Works

[Google Scholar](#)

Autoencoding Conditional Neural Processes for Representation Learning

Victor Prokhorov, Ivan Titov and Siddharth N

ArXiv, 2023

StrAE: Autoencoding for Pre-Trained Embeddings using Explicit Structure

Mattia Oppè, **Victor Prokhorov** and Siddharth N

EMNLP (main conference), 2023

Learning Sparse Sentence Encoding without Supervision: An Exploration of Sparsity in Variational Autoencoders

Victor Prokhorov, Yingzhen Li, Ehsan Shareghi and Nigel Collier

Proceedings of the 6th Workshop on Representation Learning for NLP, 2021

Unsupervised Representation Disentanglement of Text: An Evaluation on Synthetic Datasets

Lan Zhang, **Victor Prokhorov** and Ehsan Shareghi

Proceedings of the 6th Workshop on Representation Learning for NLP, 2021

On the Importance of the Kullback-Leibler Divergence Term in Variational Autoencoders for Text Generation

Victor Prokhorov, Ehsan Shareghi, Yingzhen Li, Mohammad Taher Pilehvar and Nigel Collier

Proceedings of the 3rd Workshop on Neural Generation and Translation, 2019

Unseen Word Representation by Aligning Heterogeneous Lexical Semantic Space

Victor Prokhorov, Mohammad Taher Pilehvar, Dimitri Kartsaklis, Pietro Lio, Nigel Collier

Proceedings of the AAAI Conference on Artificial Intelligence, 2019

Teaching experience

Department of Theoretical and Applied Linguistics (University of Cambridge)

Michaelmas 2019

Course: Computational Linguistics (Organiser: Nigel Collier)

Responsibilities: Supervision of a small group of students (3-4 people). Mark homework and help with the understanding of the key concepts introduced in the course.

Talks and posters

On the Importance of the Kullback-Leibler Divergence Term in Variational Autoencoders for Text Generation

2020

AI+pizza, Microsoft Research Cambridge, Cambridge, UK (Poster)

From Representation to Generation of Text

2019

Google NLP Summit, Zurich, Switzerland (Poster)

Programming

Python, PyTorch

Service

Reviewer: ICLR 2022, ACL ARR 2021

Organization: co-organiser for [Dagstuhl ELLIS NLP Workshop](#) (2022); co-organiser for Edinburgh NLP Meetings (ongoing)