

Research Summary

My research has revolved around the development of **interpretable** and **structured representations** for modelling text and images. The research in this direction can facilitate **controlled generation**, faithful **attribute binding** (in the multi-modal setting) and make an analysis of the generative models easier.

Work Experiences

Apr. 2022 **Postdoctoral Researcher**, University of Edinburgh, [ExLab](#), working with
Apr. 2024 [Siddharth N.](#) and [Ivan Titov](#)

- Conducted research on interpretable representations for images and deep generative models ([see project](#)); was responsible for leading of the project, a mathematical formulation of a Variational Autoencoder model, its implementation in PyTorch and communicating the findings via a publication.

Sep. 2020 **Research Internship**, Montreal Institute for Learning Algorithms (MILA),
Dec. 2020 working with [Siva Reddy](#)

- Conducted research on symbolic representations for text and deep generative models; was responsible for a mathematical formulation of a Variational Autoencoder model, its implementation in PyTorch.

Education

Oct. 2017 **Ph.D. Computation, Cognition and Language**, University of Cambridge,
Jan. 2022 Cambridge, UK

- **Ph.D. Thesis:** "[Injecting Inductive Biases into Distributed Representations of Text](#)," under supervision of [Nigel Collier](#) and [Ehsan Shareghi](#)

Oct. 2016 **MPhil in Advanced Computer Science**, Grade: Distinction, University of
Jun. 2017 Cambridge, Cambridge, UK

Sep. 2013 **BEng in Computer Science and Electronics**, Grade: First Class, University
Jul. 2006 of Bristol, Bristol, UK

Honors & Awards

- Mitacs Globalink Research (Mitacs, **Awarded**; did not accept)
- Student Travel Grant (Workshop: Neural Generation and Translation)

Selected Publications

- **Victor Prokhorov** and Ivan Titov and Siddharth N, "[Autoencoding Conditional Neural Processes for Representation Learning](#)" in *ArXiv*, 2023

- Mattia Oppr and **Victor Prokhorov** and Siddharth N, "[StrAE: Autoencoding for Pre-Trained Embeddings using Explicit Structure](#)" in EMNLP (main conference), 2023
- **Victor Prokhorov** and Yingzhen Li and Ehsan Shareghi and Nigel Collier, "[Learning Sparse Sentence Encoding without Supervision: An Exploration of Sparsity in Variational Autoencoders](#)" in Proceedings of the 6th Workshop on Representation Learning for NLP, 2021
- Lan Zhang and **Victor Prokhorov** and Ehsan Shareghi, "[Unsupervised Representation Disentanglement of Text: An Evaluation on Synthetic Datasets](#)" in Proceedings of the 6th Workshop on Representation Learning for NLP, 2021
- **Victor Prokhorov** and Ehsan Shareghi and Yingzhen Li and Mohammad Taher Pilehvar and Nigel Collier, "[On the Importance of the Kullback-Leibler Divergence Term in Variational Autoencoders for Text Generation](#)" in Proceedings of the 3rd Workshop on Neural Generation and Translation, 2019

Activities

- Co-organiser for Edinburgh NLP Meetings, 2022-2023
- Co-organiser for [Dagstuhl ELLIS NLP Workshop](#), 2022
- Reviewer for ICLR, 2022 and ACL ARR, 2021
- Invited poster presentation: *On the Importance of the Kullback-Leibler Divergence Term in Variational Autoencoders for Text Generation* at AI+pizza, Microsoft Research Cambridge, Cambridge, UK, 2020
- Invited poster presentation: *From Representation to Generation of Text* at Google NLP Summit, Zurich, Switzerland, 2019

Technical Skills

- **Programming**
Python, PyTorch, TensorFlow, Hugging Face