

# Serhii Havrylov

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<b>Current location</b>	London, UK	<b>Github</b>	<a href="https://github.com/serhii-havrylov">github.com/serhii-havrylov</a>
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<b>Website</b>	<a href="https://serhii-havrylov.github.io">serhii-havrylov.github.io</a>		

## Education

**Oct 2017 –** PhD student – Institute for Language, Cognition and Computation, University of Edinburgh

**Mar 2016 –** PhD candidate – Institute for Logic, Language, and Computation, University of Amsterdam  
**Sep 2017**

**2012 – 2014** MSc in Applied Mathematics – National Technical University of Ukraine  
*Diploma with honours*

**2008 – 2012** BSc in Applied Mathematics – National Technical University of Ukraine  
*Diploma with honours*

## Work experience

**May 2021 -** [Amazon UK](#)  
*Applied Scientist*

Researching, prototyping and implementing ML/NLP algorithms for improving Alexa Speech and Language technology.

**Jun 2020 -** [Google](#)  
**Sep 2020** *Research SWE intern*

Prototyping a model for eliciting user preferences via polar question generation.

**Jun 2018 -** [Facebook AI Research](#)  
**Sep 2018** *Research Intern (AI)*

During the internship, a novel model for learning latent tree parsers had been developed. The results are published at NAACL-HLT 2019.

**Oct 2013 -** [Grammarly](#)  
**Apr 2016** *Research Engineer*

Researching, prototyping and implementing ML/NLP algorithms for improving the accuracy of Grammarly's language core.

**May 2013 -** [Silver Cup](#)  
**Oct 2013** *Quantitative Analyst*

Applying machine learning techniques for development and improvement trading strategies.

## Publications

Liu, E, Jiao, Y, Massiah, J, Yilmaz, E., Havrylov, S. Trans-Encoder: Unsupervised sentence-pair modelling through self-and mutual-distillations. // [preprint](#)

Havrylov, S., Titov, I. Preventing Posterior Collapse with Levenshtein Variational Autoencoder. // [preprint](#)

Hu, Z., Havrylov, S., Titov, I., Cohen, S. Obfuscation for Privacy-preserving Syntactic Parsing. // [IWPT 2020](#)

Guo, S., Ren, Y., Havrylov, S., Frank, S., Titov, I., Smith, K. The Emergence of Compositional Languages for Numeric Concepts Through Iterated Learning in Neural Agents. // [EmeCom NeurIPS 2019 Workshop](#)

Havrylov, S., Kruszewski, G., Joulin, A. Cooperative Learning of Disjoint Syntax and Semantics. // [NAACL-HLT 2019 \(Oral presentation\)](#)

Bražinskas, A., Havrylov, S., Titov, I. Embedding Words as Distributions with a Bayesian Skip-gram Model. // [Bayesian Deep Learning NIPS 2016 Workshop](#) and [COLING2018 \(Oral presentation\)](#)

Havrylov, S., Titov, I. Emergence of Language with Multi-agent Games: Learning to Communicate with Sequences of Symbols. // [ICLR2017 Workshop track](#) and [NIPS2017](#)

Gavrylov S.V. Classifying motion capture sequences using recurrent neural networks // [SAIT 2014: System analysis and information technologies, Kyiv, Ukraine](#)

Gavrylov S.V., Drobyshev Y.P. Human motion recognition using recurrent neural networks with fast dropout regularization // [IAI 2014: XIV International Conference "Intelligent analysis of information", Kyiv, Ukraine](#)

## Volunteering, teaching

Reviewer: [NAACL-HLT 2019](#), Machine Learning for NLP area.  
[NeurIPS 2019](#) (a top 50% ranking reviewer).  
[ICML 2020](#) (a top 33% ranking reviewer).  
[EMNLP 2020](#) (Machine Learning for NLP area).  
[NeurIPS 2020](#).

Lviv Data Science Summer School [2018](#) and [2019](#): lectures on [Discrete Computation Graphs](#)

Natural Language Processing I, University of Amsterdam, Teacher Assistant, Fall term 2016

Summer school "[AACIMP-2015](#)": Theano [tutorial](#), lectures on convolutional neural networks and neural language models, project supervisor

Co-organizer and speaker at Kyiv deep learning [study group](#)

## Projects

Unsupervised constituency parse tree learning for NLP [[code](#), [slides](#)]

Quagga – CUDA/Python library that allows multi-GPU utilization by exploiting model parallelism for deep learning architectures [[code](#), [documentation](#)]

Project reproduces the model from [Show and Tell: A Neural Image Caption Generator](#) [[code](#)]

Financial coding of school's budgets and expenditures (5<sup>th</sup> /50, [drivendata](#)) [[code](#), [slides](#)]

Applying recurrent neural networks with fast dropout regularization for modeling and classification of human motion (Master's thesis)

[Classification of Psychiatric Problems Based on Saccades](#) (2<sup>nd</sup> award in IJCNN 2012 Competition: International Joint Conference on Neural Networks, Brisbane, Australia)

Development of dynamical visibility algorithm for time series analysis via complex networks, and its application for heart disease classification (Bachelor's thesis)

## Completed Trainings and Online Courses

Probabilistic Graphical Models, Stanford University  
Machine Learning, Stanford University  
Networked life, University of Pennsylvania  
Learning from data, Caltech

## Key Skills

### Technical skills

Python with data science stack: NumPy, SciPy, Pandas, scikit-learn, PyTorch, TensorFlow, Keras.  
Julia, CUDA C/C++, Java, R, MatLab

### Languages

English - full professional proficiency  
Ukrainian, Russian - native  
Italian - elementary level