Veselin Stoyanov

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Applied Research Leader with a track record of innovating in AI and NLP to solve real-world problems. Led teams to pretraining, multilingual NLP and large LM methods such as RoBERTa, XLM-R and MultiRay, which are now industry standards. Successfully used these models to improve online experiences, e.g. reduce prevalence of hate speech and bullying posts. Experienced in building and motivating high-performing diverse teams and mentoring researchers and engineers.

EXPERIENCE

Facebook / Meta Inc, Menlo Park, CA

Applied Research Scientist Manager Jul 2018 - Nov 2022

Research Scientist Jan 2013 - Jul 2018

Project highlights

MultiRay

Built a service to run multiple very large and accurate models on the same input, and share the majority of the computational costs. MultiRay makes it possible for very accurate self-supervised models to be run on every piece of content. (paper, blog)

Cross lingual NLP through XLM-R

Trained XLM-R, a state-of-the-art large-scale multilingual language model (paper, blog) and applied it to extend Integrity classifiers to many languages (blog). Extended upon previous work on multilingual word embeddings (blog).

RoBERTa for Integrity

Trained RoBERTa, a robustly optimized BERT pretraining approach, a state-of-the-art self-supervised method (paper, blog, blog). Applied it to identifying violations such as hate speech (blog) and bullying. (paper, blog)

Neural Machine Translation

Shipped the first large-scale commercial Neural MT system with big improvements to translation quality. (blog, news)

NLP for Search

Shipped several impactful NLP features to Facebook Search including phonetic name search, intent classification and keyword typeahead.

Center for Language and Speech Processing (CLSP), Johns Hopkins University

Assistant Research Scientist Oct 2010 - Jan 2013

Computing Innovation Fellowship (awarded by CRA).

Worked on Machine Learning for Structured Prediction.

EDUCATION

Cornell University

PhD in Computer Science August 2010

Master of Science in Computer Science May 2005

Advisor: Prof. Claire Cardie. Thesis: *Opinion Summarization: Automatically Creating Useful Representations of Opinions Expressed in Text*.

University of Delaware

Honors BSc, with Distinction in Computer Science May 2002

Graduated Summa Cum Laude; GPA: 4.00/4.00. Minors in Mathematics and Cognitive Science.

SELECTED PUBLICATIONS

24,000+ citations on Google Scholar, h-index of 30+. Full publication list on Google Scholar and Semantic Scholar.

RoBERTa: A Robustly Optimized BERT Pretraining Approach
Yinhan Liu, Myle Ott, Naman Goyal, Jingfei Du, Mandar Joshi, Danqi Chen, Omer Levy, Mike Lewis, Luke Zettlemoyer, **Veselin Stoyanov**

BART: Denoising sequence-to-sequence pre-training for natural language generation, translation, and comprehension
Mike Lewis, Yinhan Liu, Naman Goyal, Marjan Ghazvininejad, Abdelrahman Mohamed, Omer Levy, **Veselin Stoyanov**, Luke Zettlemoyer

Unsupervised Cross-lingual Representation Learning at Scale
Alexis Conneau, Kartikay Khandelwal, Naman Goyal, Vishrav Chaudhary, Guillaume Wenzek, Francisco Guzmán, Edouard Grave, Myle Ott, Luke Zettlemoyer, **Veselin Stoyanov**

XNLI: Evaluating Cross-lingual Sentence Representations
Alexis Conneau, Guillaume Lample, Ruty Rinott, Adina Williams, Samuel R Bowman, Holger Schwenk, **Veselin Stoyanov**

Supervised Contrastive Learning for Pre-trained Language Model Fine-tuning
Beliz Gunel, Jingfei Du, Alexis Conneau, **Veselin Stoyanov**

Emerging Cross-lingual Structure in Pretrained Language Models
Alexis Conneau, Shijie Wu, Haoran Li, Luke Zettlemoyer, **Veselin Stoyanov**

Pretrained Encyclopedia: Weakly supervised knowledge-pretrained language model
Wenhan Xiong, Jingfei Du, William Wang, **Veselin Stoyanov**

Preserving integrity in online social networks
Alon Halevy, Cristian Canton-Ferrer, Hao Ma, Umut Ozertem, Patrick Pantel, Marzieh Saeidi, Fabrizio Silvestri, **Veselin Stoyanov**

Empirical risk minimization of graphical model parameters given approximate inference, decoding, and model structure
Veselin Stoyanov, Alexander Ropson, Jason Eisner

Conundrums in noun phrase coreference resolution: Making sense of the state-of-the-art
Veselin Stoyanov, Nathan Gilbert, Claire Cardie, Ellen Riloff