

# **Fourth Workshop on Neural Generation and Translation 2020**

Online  
5 - 10 July 2020

ISBN: 978-1-7138-1381-1

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571



**Some format issues inherent in the e-media version may also appear in this print version.**

Copyright© (2020) by the Association for Computational Linguistics  
All rights reserved.

Printed with permission by Curran Associates, Inc. (2020)

For permission requests, please contact the Association for Computational Linguistics  
at the address below.

Association for Computational Linguistics  
209 N. Eighth Street  
Stroudsburg, Pennsylvania 18360

Phone: 1-570-476-8006

Fax: 1-570-476-0860

[acl@aclweb.org](mailto:acl@aclweb.org)

**Additional copies of this publication are available from:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: 845-758-0400  
Fax: 845-758-2633  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

## Table of Contents

<i>Findings of the Fourth Workshop on Neural Generation and Translation</i> Kenneth Heafield, Hiroaki Hayashi, Yusuke Oda, Ioannis Konstas, Andrew Finch, Graham Neubig, Xian Li and Alexandra Birch .....	1
<i>Learning to Generate Multiple Style Transfer Outputs for an Input Sentence</i> Kevin Lin, Ming-Yu Liu, Ming-Ting Sun and Jan Kautz .....	10
<i>Balancing Cost and Benefit with Tied-Multi Transformers</i> Raj Dabre, Raphael Rubino and Atsushi Fujita .....	24
<i>Compressing Neural Machine Translation Models with 4-bit Precision</i> Alham Fikri Aji and Kenneth Heafield .....	35
<i>Meta-Learning for Few-Shot NMT Adaptation</i> Amr Sharaf, Hany Hassan and Hal Daumé III .....	43
<i>Automatically Ranked Russian Paraphrase Corpus for Text Generation</i> Vadim Gudkov, Olga Mitrofanova and Elizaveta Filippskikh .....	54
<i>A Deep Reinforced Model for Zero-Shot Cross-Lingual Summarization with Bilingual Semantic Similarity Rewards</i> Zi-Yi Dou, Sachin Kumar and Yulia Tsvetkov .....	60
<i>A Question Type Driven and Copy Loss Enhanced Framework for Answer-Agnostic Neural Question Generation</i> Xiuyu Wu, Nan Jiang and Yunfang Wu .....	69
<i>A Generative Approach to Titling and Clustering Wikipedia Sections</i> Anjalie Field, Sascha Rothe, Simon Baumgartner, Cong Yu and Abe Ittycheriah .....	79
<i>The Unreasonable Volatility of Neural Machine Translation Models</i> Marzieh Fadaee and Christof Monz .....	88
<i>Leveraging Sentence Similarity in Natural Language Generation: Improving Beam Search using Range Voting</i> Sebastian Borgeaud and Guy Emerson .....	97
<i>Distill, Adapt, Distill: Training Small, In-Domain Models for Neural Machine Translation</i> Mitchell Gordon and Kevin Duh .....	110
<i>Training and Inference Methods for High-Coverage Neural Machine Translation</i> Michael Yang, Yixin Liu and Rahul Mayuranath .....	119
<i>Meeting the 2020 Duolingo Challenge on a Shoestring</i> Tadashi Nomoto .....	129
<i>English-to-Japanese Diverse Translation by Combining Forward and Backward Outputs</i> Masahiro Kaneko, Aizhan Imankulova, Toshio Hirasawa and Mamoru Komachi .....	134
<i>POSTECH Submission on Duolingo Shared Task</i> Junsu Park, Hongseok Kwon and Jong-Hyeok Lee .....	139

<i>The ADAPT System Description for the STAPLE 2020 English-to-Portuguese Translation Task</i> Rejwanul Haque, Yasmin Moslem and Andy Way .....	144
<i>Expand and Filter: CUNI and LMU Systems for the WNGT 2020 Duolingo Shared Task</i> Jindřich Libovický, Zdeněk Kasner, Jindřich Helcl and Ondřej Dušek .....	153
<i>Exploring Model Consensus to Generate Translation Paraphrases</i> Zhenhao Li, Marina Fomicheva and Lucia Specia .....	161
<i>Growing Together: Modeling Human Language Learning With n-Best Multi-Checkpoint Machine Translation</i> El Moatez Billah Nagoudi, Muhammad Abdul-Mageed and Hasan Cavusoglu .....	169
<i>Generating Diverse Translations via Weighted Fine-tuning and Hypotheses Filtering for the Duolingo STAPLE Task</i> Sweta Agrawal and Marine Carpuat .....	178
<i>The JHU Submission to the 2020 Duolingo Shared Task on Simultaneous Translation and Paraphrase for Language Education</i> Huda Khayrallah, Jacob Bremerman, Arya D. McCarthy, Kenton Murray, Winston Wu and Matt Post .....	188
<i>Simultaneous paraphrasing and translation by fine-tuning Transformer models</i> Rakesh Chada .....	198
<i>The NiuTrans System for WNGT 2020 Efficiency Task</i> Chi Hu, Bei Li, Yinqiao Li, Ye Lin, Yanyang Li, Chenglong Wang, Tong Xiao and Jingbo Zhu	204
<i>Efficient and High-Quality Neural Machine Translation with OpenNMT</i> Guillaume Klein, Dakun Zhang, Clément Chouteau, Josep Crego and Jean Senellart .....	211
<i>Edinburgh's Submissions to the 2020 Machine Translation Efficiency Task</i> Nikolay Bogoychev, Roman Grundkiewicz, Alham Fikri Aji, Maximiliana Behnke, Kenneth Heafield, Sidharth Kashyap, Emmanouil-Ioannis Farsarakis and Mateusz Chudyk .....	218
<i>Improving Document-Level Neural Machine Translation with Domain Adaptation</i> Sami Ul Haq, Sadaf Abdul Rauf, Arslan Shoukat and Noor-e- Hira .....	225
<i>Simultaneous Translation and Paraphrase for Language Education</i> Stephen Mayhew, Klinton Bicknell, Chris Brust, Bill McDowell, Will Monroe and Burr Settles	232