ROCLING 2020: The 32nd Conference on Computational Linguistics and Speech Processing

第三十二屆自然語言與語音處理研討會

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Welcome Message from ROCLING 2020

On behalf of the organizing committee, it is our pleasure to welcome you to National Taipei University of Technology (NTUT), Taipei, Taiwan, for the 32nd Conference on Computational Linguistics and Speech Processing (ROCLING), the flagship conference on computational linguistics, natural language processing, and speech processing in Taiwan. ROCLING is the annual conference of the Association for Computational Linguistics and Chinese Language Processing (ACLCLP) which is regularly held by different universities in different cities of Taiwan.

ROCLING 2020 features two distinguished keynote speeches from the renowned researchers in natural language processing as well as speech processing. Prof. Tomoki Toda (Professor, Information Technology Center, Nagoya University, Japan) will give a keynote on the "Recent Trend of Voice Conversion Research and Its Possible Future Direction". Prof. Hiroyuki Shinnou (Professor, Department of Computer and Information Sciences, Ibaraki University, Japan) will talk about the "Use of BERT for NLP tasks by HuggingFace's transformers".

ROCLING 2020 is going to provide an international forum for researchers and industry practitioners to share their new ideas, original research results and practical development experiences from all NLP areas, including computational linguistics, information understanding, and speech processing. To facilitate more cross-domain communication and collaboration, we organize a special session on Natural Language Processing for Digital Humanities with Taiwanese Association for Digital Humanities (TADH). In addition to the regular sessions during the first two days, the AI Tutorial organized by SIG-AI (Artificial Intelligence Special Interest Group) of ACLCLP and the Science & Technology Policy Research and Information Center (STPI) will provide Artificial Intelligence Courses that focus on speech processing and NLP applications on the last day. It's sure to be an exciting event for all participants.

This conference would not have been possible without the tremendous effort of organizing committee and program committee who have worked closely to put together the attractive and intensive scientific program. Their great achievements have contributed much to the visibility of ROCLING 2020. We would like to express our sincere thank and gratitude to all of them. Special thanks to organizers who have worked hard to produce the proceedings, communicate with participants/authors, and handle the registration, budget, local arrangements and logistics. Thanks to all organizers including Program Chairs: Lung-Hao Lee and Kuan-Yu Chen, Tutorial Chair: Hung-Yi Lee, Industry Chair: Chi-Chun Lee, Demo Chair: Syu-Siang Wang, Publication Chair: Hen-Hsen Huang, Web Chair: Chuan-Ming Liu. Thanks to special session organizer: Chao-Lin Liu, and the invited speakers: Jen-Jou Hung, Su-bing Chang, and Wu, wan-yi. Thanks to all participants, authors, and program committee members and reviewers who contributed their valuable time and effort to provide timely and comprehensive reviews. Finally, we thank the generous government, academic and industry sponsors and appreciate your enthusiastic participation and support. Wih the best for a successful and fruitful ROCLING 2020 in Taipei, Taiwan.

General Chairs
Jenq-Haur Wang and Ying-Hui Lai

Keynote Speaker I

Tomoki Toda

Professor, Information Technology Center, Nagoya University, Japan

Biography

Tomoki Toda was born in Aichi, Japan on January 18, 1977. He earned his B.E. degree from Nagoya University, Aichi, Japan, in 1999 and his M.E. and D.E. degrees from the Graduate School of Information Science, NAIST, Nara, Japan, in 2001 and 2003, respectively.

He is a Professor at the Information Technology Center, Nagoya University. He has also been a Visiting Researcher at the NICT, Kyoto, Japan, since 2006. He was a Research Fellow of JSPS in the Graduate School of Engineering, Nagoya Institute of Technology, Aichi, Japan, from 2003 to 2005. He was then an Assistant Professor (2005-2011) and an Associate Professor (2011-2015) at the Graduate School of Information Science, NAIST. From 2001 to 2003, he was an Intern Researcher at the ATR Spoken Language Communication Research Laboratories, Kyoto, Japan, and then he was a Visiting Researcher at the ATR until 2006. He was also a Visiting Researcher at the Language Technologies Institute, CMU, Pittsburgh, USA, from October 2003 to September 2004 and at the Department of Engineering, University of Cambridge, Cambridge, UK, from March to August 2008. His research interests include statistical approaches to speech, music, and sound information processing.

He received more than 10 paper awards including the 18th TELECOM System Technology Award for Students and the 23rd TELECOM System Technology Award

from the TAF, the 2007 ISS Best Paper Award from the IEICE, the 2009 Young Author Best Paper Award from the IEEE SPS, and the 2013 Best Paper Award (Speech Communication Journal) from EURASIP-ISCA. He also received the 10th Ericsson Young Scientist Award from Nippon Ericsson K.K., the 4th Itakura Prize Innovative Young Researcher Award from the ASJ, the 2012 Kiyasu Special Industrial Achievement Award from the IPSJ, and the Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology, the Young Scientists' Prize in 2015. He served as a member of the Speech and Language Technical Committee of the IEEE SPS from 2007 to 2009 and 2014 to 2016. He has served as an Associate Editor of IEEE Signal Processing Letters since Nov. 2016. He is a member of IEEE, ISCA, IEICE, IPSJ, and ASJ.

Keynote Speech A

Recent Trend of Voice Conversion Research and Its Possible Future Direction

September 24, 2020 (Thursday) 9:30-10:30

Venue: The Lecture Hall, GIS Convention Center

Abstract

Voice conversion is a technique for modifying speech waveforms to convert non-/paralinguistic information into any form we want while preserving linguistic content. It has been dramatically improved thanks to significant progress in machine learning techniques, such as deep learning, as well as significant efforts to develop freely available resources. In this talk, I will review recent progress of voice conversion techniques, overviewing recent research activities including Voice Conversion Challenges, and then, I will also discuss possible future directions of voice conversion research.

Keynote Speaker II

Hiroyuki Shinnou

Professor, Department of Computer and Information Sciences, Ibaraki University, Japan

Biography

Prof. Hiroyuki Shinnou worked as a researcher in Fuji Xerox Co., Ltd. and Panasonic Corporation during 1987 and 1993. He joined the Faculty of Engineering, Ibaraki University in 1993, as a research assistant. After receiving his Ph.D. degree in Tokyo Institute of Technology in 1997, he worked as a lecturer, and an associate professor in Ibaraki University, respectively. He is currently a professor at the Department of Computer and Information Sciences in Ibaraki University.

Prof. Shinnou has long been active in the academic associations related to natural language processing, including ACL (Association of Computational Linguistics), JSAI, and IPSJ. Now, he serves as the director of the Association for Natural Language Processing (ANLP), and serves as the conference chairman in the annual conference NLP 2020 this year, which is the most important conference on Natural Language Processing in Japan.

Prof. Shinnou has published many academic papers in international journals such as ACM TALIP, and Natural Language Processing (in Japanese), and international conferences including ACL, PACLIC, LREC. His research interests include Bayes statistics, machine learning, natural language processing and image processing. Since he integrates theory with practice, he also published many books (mostly in Japanese),

which have great impact in related fields. Recently, he is actively researching deep learning technology, especially transfer learning.

Keynote Speech B

Use of BERT for NLP tasks by HuggingFace's transformers

September 25, 2020 (Friday) 9:30-10:30

Venue: The Lecture Hall, GIS Convention Center

Abstract

The pre-trained BERT model has been improving states of many NLP tasks. I believe that the use of BERT is essential when we build some kind of NLP system in the future. Initially, it was hard to use BERT because the concept of the pre-trained model was unfamiliar, and BERT was available only by using TensorFlow which is cumbersome for beginners. However, today, there is the HuggingFace's transformers library. Thanks to this library, everyone can utilize BERT easily.

In this talk, first I will explain what BERT is and what we can do by BERT, and then I show some examples of the use of BERT by HuggingFace's transformers. As an application, I will do fine-tuning of BERT for a document classification task. Additionally, I will show the technique to learn just some of the layers in BERT. As one of the improvements of BERT, the study on smaller BERT model have been active, for example, Q8BERT, ALBERT, DistilBERT, TinyBERT and so on. Even simple pruning of BERT is effective. I will introduce these studies and show that some of these models are available through HuggingFace's transformers.

Contents

Oral Papers

Posters and System Demonstrations

Special Session: NLP for Digital Humanities