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Welcome Message of the ROCLING 2018

On behalf of the organization committee and program committee, it is our pleasure to welcome you to National Tsing Hua University (NTHU) in Hsinchu, Taiwan, for the 30th 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 Computational Linguistics and Chinese Language Processing (ACLCLP) which is held in autumn in different cities and universities in Taiwan. This year, we received 30 valid submissions, each of which was reviewed by at least three experts on the basis of originality, significance, technical soundness, and relevance to the conference. In total, we have 20 oral papers and 7 poster papers, which cover the areas including computational semantics, computational phonology, dialogue system, natural language generation, syntax and parsing, information retrieval, machine translation, NLP tools/applications, opinion mining and sentiment analysis, question answering, semantic processing, summarization, spoken language processing, speech synthesis/conversion, speech/speaker/language recognition, and speech enhancement. We are grateful to the contribution of the reviewers for their extraordinary efforts and valuable comments.

ROCLING 2018 also features two distinguished lectures from the renowned speakers in natural language processing as well as speech processing. Prof. Kathleen McKeown (Henry and Gertrude Rothschild Professor of Computer Science, Columbia University/Founding Director of Columbia's Data Science Institute) will lecture on “Where Natural Language Processing Meets Societal Needs”, and Prof. Shinji Watanabe (Johns Hopkins University, Department of Electrical and Computer Engineering joint appointment in Center for Language and Speech Processing) will speak on “Neural End-to-End Architectures for Speech Recognition in Adverse Environments”. In addition to the oral/poster paper presentations and the two distinguished lectures, ROCLING 2018 also arranges the Kaldi Tutorial program organized by Prof. Yuan-Fu Liao (National Taipei University of Technology) to respond accordingly to the increasing demand for rapid development of speech recognition technology. Finally, we thank the generous government, academic and industry sponsors and appreciate your enthusiastic participation and support. Best wishes a successful and fruitful ROCLING 2018 in Hsinchu, Taiwan.

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Keynote Speakers

Keynote Speaker I



Prof. Kathleen McKeown

Henry and Gertrude Rothschild Professor of Computer Science, Columbia University
Founding Director of Columbia's Data Science Institute

Topic: Where Natural Language Processing Meets Societal Needs

Abstract

The large amount of language available online today makes it possible to think about how to use natural language processing to help address needs faced by society. In this talk, I will describe research in our group on summarization and sentiment analysis that addresses several different challenges. We have developed approaches that can be used to help people live and work in today's global world, providing access to information only available in low resource languages, approaches to help determine where problems lie following a disaster, and approaches to identify when the social media posts of gang-involved youth in Chicago express either aggression or loss.

Biography

Prof. Kathleen R. McKeown is the Henry and Gertrude Rothschild Professor of Computer Science at Columbia University and is also the Founding Director of the Data Science Institute at Columbia. She served as the Director from July 2012 - June 2017. She served as Department Chair from 1998-2003 and as Vice Dean for Research for the School of Engineering and Applied Science for two years. McKeown received a Ph.D. in Computer Science from the University of Pennsylvania in 1982 and has been at Columbia since then. Her research interests include text summarization, natural language generation, multi-media explanation, question-answering and multi-lingual applications.

In 1985 she received a National Science Foundation Presidential Young Investigator Award, in 1991 she received a National Science Foundation Faculty Award for Women, in 1994 she was selected as a AAAI Fellow, in 2003 she was elected as an ACM Fellow, and in 2012 she was selected as one of the Founding Fellows of the Association for Computational Linguistics. In 2010, she received the Anita Borg Women of Vision Award in Innovation for her work on text summarization. McKeown is also quite active nationally. She has served as President, Vice President, and Secretary-Treasurer of the Association of Computational Linguistics. She has also served as a board member of the Computing Research Association and as secretary of the board.

Keynote Speaker II



Prof. Shinji Watanabe

Johns Hopkins University, Department of Electrical and Computer Engineering joint appointment in Center for Language and Speech Processing

Topic: Neural End-to-End Architectures for Speech Recognition in Adverse Environments

Abstract

Recently, the end-to-end automatic speech recognition (ASR) paradigm has attracted great research interest as an alternative to conventional hybrid paradigms with deep neural networks and hidden Markov models. Using this novel paradigm, we simplify ASR architecture by integrating such ASR components as acoustic, phonetic, and language models with a single neural network and optimize the overall components for the end-to-end ASR objective: generating a correct label sequence. This talk introduces extensions of this end-to-end architectures to tackle major problems of current ASR technologies in adverse environments including multilingual, multi-speaker, and distant-talk conditions. For multilingual issues, we fully exploit the advantage of eliminating the need for linguistic information such as pronunciation dictionaries in end-to-end ASR, and build a monolithic multilingual ASR system with a language-independent neural network architecture, which can recognize speech in 10 different languages. We also extend the end-to-end ASR system to deal with multi-speaker ASR where the system directly decodes multiple label sequences from a single speech sequence by unifying source separation and speech recognition functions in an end-to-end manner. Finally, we propose a unified architecture to encompass microphone-array signal processing such as a state-of-the-art neural beamformer within the end-to-end framework. This architecture allows speech enhancement and ASR components to be jointly optimized to improve the end-to-end

ASR objective and leads to an end-to-end framework that works well in the presence of strong background noise.

Biography

Shinji Watanabe is an Associate Research Professor at Johns Hopkins University, Baltimore, MD. He received his B.S. and M.S. Degrees in 1999 and 2001 at Ohba-Nakazato Laboratory, and received his PhD (Dr. Eng.) Degree in 2006 (advisor: Tetsunori Kobayashi), from Waseda University, Tokyo, Japan, in 2006. From 2001 to 2011, he was a research scientist at NTT Communication Science Laboratories, Kyoto, Japan. From January to March in 2009, he was a visiting scholar in Georgia institute of technology, Atlanta, GA. From January 2012 to June 2017, he was a Senior Principal Research Scientist at Mitsubishi Electric Research Laboratories (MERL), Cambridge, MA. His research interests include Bayesian machine learning and speech and spoken language processing. He has been published more than 150 papers in top journals and conferences, and received several awards including the best paper award from the IEICE in 2003. He served an Associate Editor of the IEEE Transactions on Audio Speech and Language Processing, and is a member of several technical committees including the IEEE Signal Processing Society Speech and Language Technical Committee.