YU BAO

Ph. D. · Nanjing University

Tel: (+86) 187-5195-7968 | nlp.baoy@gmail.com | baoy-nlp.github.io

EDUCATION

Nanjing University   *Nanjing, China*
PH. D. IN COMPUTER SCIENCE   *Mar. 2022*
- Dissertation: *Research on Deep Text Generation Models with Structure Modeling*
- Advisor: Prof. Jiajun Chen and Prof. Shujian Huang

Northeast Forestry University   *Harbin, China*
B. SC. IN MATHEMATICS   *Jul. 2015*
- Thesis: *Stock Selection by Clustering and Dynamic Programming*

RESEARCH INTERESTS

My main research interests include *structural prediction* and *natural language generation*.
- **Structural Prediction**: In my earlier research experiences, I was devoted to *structural prediction tasks*, such as word segmentation, named entity recognition, syntax parsing, etc.
- **Natural Language Generation**: Since 2018, I have been studying *deep generative models*, including variational autoencoders (VAE) or non-autoregressive Transformer (NAT). The research findings are published at top-tier *ACL venues.

EXPERIENCES

ByteDance AI Lab   *Shanghai, China*
RESEARCH INTERN   *Apr. 2021 - Present*
- **Parallel Decoding Sequences by Glancing Discrete Latent Variables** [7]

  Highlight: We propose to train non-autoregressive models by glancing training with discrete latent variables, which eliminates the limitation of knowledge distillation and implements the high-efficient parallel decoding on widely scenarios.
- **Glancing Transformer for Non-Autoregressive Neural Machine Translation** [5]

  Highlight: This work achieved success in WMT-2021 and *won the first place in English↔German translation setting*. It also has been deployed to ByteDance VolcTrans. To the best of our knowledge, it is the first deployed parallel translation system in the world with 10X speedup.
- Mentor: Dr. Hao Zhou

ByteDance AI Lab   *Beijing, China*
RESEARCH INTERN   *Jan. 2019 - Sept. 2019*
- **PNAT: Non-autoregressive Transformer by Position Learning** [1]
- **Generating Sentences from Disentangled Syntactic and Semantic Spaces** [2]
- Mentor: Dr. Hao Zhou and Dr. Lei Li

AWARDS

Outstanding PhD candidate, Nanjing University, 2020

Artificial Intelligence Scholarship, Nanjing University, 2019

Outstanding Graduate Student, Nanjing University, 2019

The Second Prize of the Heilongjiang Province Division in National University Student Mathematical Modeling Competition, 2013

Publications

[7] **Parallel Sequence Decoding by Mixing Discrete Latent Variables**
Yu Bao, Hao Zhou, Shujian Huang, Dongqi Wang, Lihua Qian, Xinyu Dai, Jiajun Chen and Lei Li
ACL 2022 | CCF-A | To appear

[6] **Unsupervised Paraphrasing via Syntactic Template Sampling**
Yu Bao, Shujian Huang, Hao Zhou, Lei Li, Xinyu Dai, Jiajun Chen
SCIENTIA SINICA Informationis 2022 | CCF-A in Chinese | Paper

[5] **Glancing Transformer for Non-Autoregressive Neural Machine Translation**
Lihua Qian, Hao Zhou, **Yu Bao**, Mingxuan Wang, Lin Qiu, Weinan Zhang, Yong Yu, Lei Li
ACL 2021 | CCF-A | Paper | Code

[4] **Non-Autoregressive Translation by Learning Target Categorical Codes**
Yu Bao, Shujian Huang, Tong Xiao, Dongqi Wang, Xinyu Dai, Jiajun Chen
NAACL-HLT 2021 | CCF-C | Paper | Video | Code

[3] **Explicit Semantic Decomposition for Definition Generation**
Jiahuan Li*****, **Yu Bao***, Shujian Huang, Xinyu Dai, Jiajun Chen
ACL 2020 | CCF-A | Paper | Video

[2] **Generating Sentences from Disentangled Syntactic and Semantic Spaces**
Yu Bao*, Hao Zhou*****, Shujian Huang, Lei Li, Lili Mou, Olga Vechtomova, Xinyu Dai, Jiajun Chen
ACL 2019 | CCF-A | Paper | Code

[1] **PNAT: Non-Autoregressive Transformer by Position Learning**
Yu Bao, Hao Zhou, Jiangtao Feng, Mingxuan Wang, Shujian Huang, Jiajun Chen, Lei Li
arxiv preprint 2019 | Paper

Talks

1. Research and Development of Parallel Text Generation, ByteDance AI Lab, Online, Oct. 2021.

2. Advice for Undergraduate Students, Northeast Forestry University, Online, Nov. 2020.

Teaching experiences

1. Teaching Assistant: Natural Language Generation and Machine Translation, Nanjing University, 2021

2. Teaching Assistant: Advanced Programming in C++, Nanjing University, 2020 & 2018

3. Teaching Assistant: Introduction to Software Industry, Nanjing University, 2018

Academic Services

Student Member of Youth Working Committee of the Chinese Information Processing Society of China (CIPSC)

Journal Reviewer of Journal of Artificial Intelligence Research (JAIR)

Program Committee Members of SIGKDD 2022, NAACL 2022, ACL 2022, ICLR 2022, AAAI 2022, EMNLP 2021, ACL 2021, IJCAI 2020, etc.

Skills

Programming Python, PyTorch, LaTeX
Languages Chinese (native), English (CET6)