付振新 (Zhenxin Fu)

Peking University

- School of Electronics Engineering and Computer Science (EECS)
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Personal

I am a second year graduate student at EECS and ICST, majoring in Computer Science and Natural Language Processing. I develop research interests in style transfer, dialog system and multi-task learning. I am also a member of the student cluster competition team of Peking University, knowing commonsense on popular developing tools.

Education

- **B.S. Computer Science, EECS, Peking University, 2014-2018** : Major in computer science, developing interest in network, database and parallel computing.

- **M.S. Candidate. Natural Language Processing, ICST, Peking University, 2018-Present** : Major in Natural Language Processing, developing interest in style transfer, open-domain conversation.

Competition & Internship

- **Student Cluster Competition at SC16, SC17 & ASC19, 2016, 2017 & 2019** : I am in charge of reproducing results of a given paper on our own cluster. We are selected to contribute to a special issue of the journal, Parallel Computing, as one of the top teams from reproducibility challenge. In ASC19, I worked as a coach.

- **Tencent Beijing 2017.4–2017.8** : Test Engineer (Intern) for virtual assistants & name entity recognition task using sequence labeling.

- **Alibaba Group 2018.8–Present** : Research Intern for Natural Languge Processing in AliMe Team & DAMO Academy.

Publications

- **Joint Learning of Word Representation and Sense Representation for Unsupervised Word Sense Disambiguation**, AAAI Student Abstract and Poster Program, 2020.
  *Jie Wang, **Zhenxin Fu**, Moxin Li, Haisong Zhang, Dongyan Zhao, Rui Yan.*
  Unsupervised WSD by learning the sense representation through the supervision from word embedding.

- **Query-bag Matching with Mutual Coverage for Information-seeking Conversations in E-commerce**, CIKM (Short), 2019.
  ***Zhenxin Fu**, Feng Ji, Wenpeng Hu, Wei Zhou, Dongyan Zhao, Haiqing Chen, Rui Yan.*

A bag containing lots of questions corresponds to a same answer. Ranking the bag directly helps the information-seeking conversation.

- **Semi-supervised Text Style Transfer: Cross Projection in Latent Space**, EMNLP-IJCNLP, 2019.
  Mingyue Shang, Piji Li, Zhenxin Fu, Lidong Bing, Dongyan Zhao, Shuming Shi, Rui Yan.
  Semi-supervsed text style transfer with cross projection in latent space: cross training autoencoder, style transfer and latent space projection.

- **Multilingual Dialogue Generation with Shared-Private Memory**, NLPCC (English), 2019. **Outstanding Paper Award**.
  Chen Chen, Lisong Qiu, Zhenxin Fu, Junfei Li, Rui Yan.
  Multilingual dailog generation with shared-private memory inspired from multi-task learning.

- **Automated ICD Coding Based on Word Embedding with Entry Embedding and Attention Mechanism (**基于融合条目词嵌入和注意力机制的自动 **ICD** 编码**)**, NLPCC (Chinese), 2019.
  Hongke Zhang, Zhenxin Fu, Qianping Ren, Hui Xu, Dongyan Zhao, Rui Yan.
  A classification model for International Classification of Disease (ICD) with item embedding and label attention.

- **Find a Reasonable Ending for Stories: Does Logic Relation Help the Story Cloze Test?** AAAI Student Abstract and Poster Program, 2019.
  Mingyue Shang, Zhenxin Fu, Hongzhi Yin, Bo Tang, Dongyan Zhao, Rui Yan.
  Natural language inference is used to promote story cloze test.

- **Student Cluster Competition 2017, Team Peking University: Reproducing Vectorization of the Tersoff Multi-Body Potential on the Intel Broadwell Architecture**, Parallel Computing (Journel), 2018.
  Zhenxin Fu, Lei Yang, Wenbin Hou, Zhuohan Li, Yifan Wu, Yihua Cheng, Xiaolin Wang, Yun Liang.
  The report of reproducibility challenge for the student cluster competition at SC17.

- **Learning to Converse with Noisy Data: Generation with Calibration**, IJCAI-ECAI, 2018.
  Mingyue Shang, Zhenxin Fu, Nanyun Peng, Yansong Feng, Dongyan Zhao, Rui Yan.
  Noise training cases harm trainnig process of generation-based dialog system. So we integrate instance weight into dialog system to overcome the problem.

- **One "Ruler" for All Languages: Multi-Lingual Dialogue Evaluation with Adversarial Multi-Task Learning**, IJCAI-ECAI, 2018.
  Xiaowei Tong, Zhenxin Fu, Mingyue Shang, Dongyan Zhao, Rui Yan.
  We apply multi-task learning in open-domain dialog evaluation.

- **Style Transfer in Text: Exploration and Evaluation**, AAAI, 2018.
  Zhenxin Fu, Xiaoye Tan, Nanyun Peng, Dongyan Zhao, Rui Yan.
  We propose unsupervised sequence to sequence model to transfer text from style A to style B. For example, converting paper title to news title.

- **ParConnect Reproducibility Report**, Parallel Computing (Journal), 2017.
  Lei Yang, Yilong Li, Zhenxin Fu, Zhuohan Li, Wenbin Hou, Haoze Wu, Xiaolin Wang, Yun Liang.
  The report of reproducibility challenge for the student cluster competition at SC16.

Others

- **Reviewer**: AAAI-2019; ACL-2019; EMNLP-2019; INLG-2019; AAAI-2020.

- **Teaching assistant**: Introduction to Natural Language Processing: Foundation, Theory and Application, Spring 2019.

- **Scholarship**: Wang Xuan Scholarship, first prize for the undergraduate internship at ICST.

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`https://zhenxinfu.com/zhenxinfu.pdf`

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简介

北京大学计算机科学技术研究所硕士二年级在读，研究方向为自然语言处理。感兴趣的研究领域包括文本风格迁移，开放域对话系统和多任务学习。同时，作为北大超算队队员，参加过 SC16、SC17 和 ASC19 大学生超算比赛。

教育经历

- 学士学位 北京大学 信息科学技术学院 2014-2018：专业为计算机科学与技术，对网络，数据库，并行计算等方向比较有兴趣.

- 硕士在读 北京大学 计算机科学技术研究所 2018-今：专业为自然语言处理，对文本风格迁移，开放域对话系统比较有兴趣.

比赛和实习

- 大学生超算比赛 **(SC16, SC17, ASC19)**：在前两次比赛中负责论文复现部分（在自有集群上复现一篇 SC 会议论文）。由于该项目上较高的成绩，我们受邀在期刊 Parallel Computing 上展示我们的复现报告。以教练的身份参加 ASC19。

- 腾讯北京 **2017.4–2017.8**：智能助手测试，命名实体识别.

- 阿里巴巴 **2018.8--今**: 自然语言处理方向研究型实习生，阿里小蜜 & 达摩院团队.

论文

- **Joint Learning of Word Representation and Sense Representation for Unsupervised Word Sense Disambiguation**, AAAI Student Abstract and Poster Program, 2020.
  *Jie Wang, **Zhenxin Fu**, Moxin Li, Haisong Zhang, Dongyan Zhao, Rui Yan.*
  通过词表示监督中间词义表示来进行无监督的词义消歧：词表示由词义表示组成。

- **Query-bag Matching with Mutual Coverage for Information-seeking Conversations in E-commerce**, CIKM (Short), 2019.
  ***Zhenxin Fu**, Feng Ji, Wenpeng Hu, Wei Zhou, Dongyan Zhao, Haiqing Chen, Rui Yan.*
  Bag 有一些列问题组成，这些问题对应相同的回复。通过用户问题和 Bag 的匹配增强对话系统。

- **Semi-supervised Text Style Transfer: Cross Projection in Latent Space**, EMNLP-IJCNLP, 2019.
  *Mingyue Shang, Piji Li, **Zhenxin Fu**, Lidong Bing, Dongyan Zhao, Shuming Shi, Rui Yan.*
  半监督的文本风格迁移，交叉训练风格迁移，自编码器，隐变量映射。

- **Multilingual Dialogue Generation with Shared-Private Memory**, NLPCC (English), 2019. **Outstanding Paper Award**.
  *Chen Chen, Lisong Qiu, **Zhenxin Fu**, Junfei Li, Rui Yan.*
  基于共享-私有 Memory 的多语言对话模型，受多任务学习启发。

- **Automated ICD Coding Based on Word Embedding with Entry Embedding and Attention Mechanism (**基于融合条目词嵌入和注意力机制的自动 **ICD** 编码**)**, NLPCC (Chinese), 2019.
  *Hongke Zhang, **Zhenxin Fu**, Qianping Ren, Hui Xu, Dongyan Zhao, Rui Yan.*
  病例自动化编码，利用条目表示和类别注意力的分类模型。

- **Find a Reasonable Ending for Stories: Does Logic Relation Help the Story Cloze Test?** AAAI Student Abstract and Poster Program, 2019.
  *Mingyue Shang, **Zhenxin Fu**, Hongzhi Yin, Bo Tang, Dongyan Zhao, Rui Yan.*
  利用自然语言推理辅助故事结尾预测任务。

- **Student Cluster Competition 2017, Team Peking University: Reproducing Vectorization of the Tersoff Multi-Body Potential on the Intel Broadwell Architecture**, Parallel Computing (Journel), 2018.
  ***Zhenxin Fu**, Lei Yang, Wenbin Hou, Zhuohan Li, Yifan Wu, Yihua Cheng, Xiaolin Wang, Yun Liang.*
  为 SC17 大学生超算比赛的论文复现报告。

- **Learning to Converse with Noisy Data: Generation with Calibration**, IJCAI-ECAI, 2018.
  *Mingyue Shang, **Zhenxin Fu**, Nanyun Peng, Yansong Feng, Dongyan Zhao, Rui Yan.*
  对话数据含有大量的噪声，数据质量对模型效果有较大影响。本文提出将 Instance Weight 应用到对话生成，使不同质量的数据样本对模型更新有不同影响。

- **One "Ruler" for All Languages: Multi-Lingual Dialogue Evaluation with Adversarial Multi-Task Learning**, IJCAI-ECAI, 2018.
  *Xiaowei Tong, **Zhenxin Fu**, Mingyue Shang, Dongyan Zhao, Rui Yan.*
  将 Multi-task 思想引入到对话评测当中，不同语言之间互相促进。

- **Style Transfer in Text: Exploration and Evaluation**, AAAI, 2018.
  ***Zhenxin Fu**, Xiaoye Tan, Nanyun Peng, Dongyan Zhao, Rui Yan.*
  本文提出一种无监督的序列到序列模型，将一句话从一种风格转换为另一种风格。并且提出了两个评价指标作为对该研究方向的促进。

- **ParConnect Reproducibility Report**, Parallel Computing (Journal), 2017.
  *Lei Yang, Yilong Li, **Zhenxin Fu**, Zhuohan Li, Wenbin Hou, Haoze Wu, Xiaolin Wang, Yun Liang.*
  为 SC16 大学生超算比赛的论文复现报告。

其他

- 审稿人: AAAI-2019; ACL-2019; EMNLP-2019; INLG-2019; AAAI-2020.

- 助教: 自然语言处理导论：基础，理论与应用，2019 年春.

- 奖学金: 北大计算所王选奖学金（一等）；北京大学专项奖学金.