

Zheng Li

PHD CANDIDATE

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Research Interests

My current research focuses on developing deep transfer learning methods to enhance **Low-Resource Natural Language Processing (LR-NLP)** performances, including **cross-domain**, **cross-lingual** and **cross-task** settings. Revolving around this goal, I mainly study the following topics:

- **Machine Learning:** transfer learning, especially domain adaptation, meta-learning, multi-task learning, graph embedding
- **Natural Language Processing:** sentiment analysis, opinion mining, information extraction, question answering

Education

Hong Kong University of Science and Technology (HKUST)

PH.D. CANDIDATE, DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING.

- Supervisor: Prof. **Qiang Yang**.

Hong Kong SAR

Aug. 2016 - Jun. 2020

Sun Yat-Sen University (SYSU)

B.S., DEPARTMENT OF DATA AND COMPUTER SCIENCE

Excellent thesis awards & Excellent undergraduate awards

Guangzhou, China

Aug. 2012 - Jun. 2016

Working Experience

Amazon Search (A9), Search and NLP Group - Query Understanding

APPLIED SCIENTIST INTERN, SUPERVISED BY BING YIN AND HEADDEN, WILL

Research topic: multi-lingual & cross-lingual transfer for search query understanding via meta-learning

Palo, Alto, CA, USA

Seq. 2019-Dec. 2019

Microsoft Research Asia (MSRA) - Multimedia Search and Mining Group

RESEARCH INTERN, SUPERVISED BY DR. **MEI TAO**

Research topic: DNN-based visual tracking.

HKUST FOK YING TUNG Research

RESEARCH INTERN, SUPERVISED BY PROF. **QIANG YANG**

- Develop a Coffee Tag Cloud system for LaiYe based on Heroku and Django, which can automatically capture important tags from the dialogs when ordering coffee. (**Demo & Samples: 1, 2, 3**)
- Develop machine learning methods for solving the imbalanced multi-label classification problem, which can achieve about 82% Micro-F1.

Beijing, China

Jun. 2015 - Sep. 2015

Guangzhou, China

Jun. 2016 - Aug. 2016

Publications

Transferable E2E Aspect-based Sentiment Analysis with Selective Adversarial Learning

EMNLP'19 (Long paper, oral)

ZHENG LI, XIN LI, YING WEI, LIDONG, BING, YU ZHANG, QIANG YANG

May. 2019

- Explore an unsupervised domain adaptation for E2E-ABSA, which jointly learns aspect terms along with their sentiments across domains.
- Formulate it as adaptation in sequence labeling based on the unified tagging scheme and propose a **Selective Adversarial Learning (SAL)** method for fine-grained (word-level) adaptation, which can improve the model without SAL about **6-10%** Micro-F1 among 12 transfer pairs.

Exploiting Coarse-to-Fine Task Transfer for Aspect-level Sentiment Classification

AAAI'19, oral

ZHENG LI, YING WEI, YU ZHANG, XIANG ZHANG, XIN LI, QIANG YANG

Feb. 2019

- Introduce a cross-domain & cross-task setting for fine-grained sentiment analysis and release a new data resource.
- Propose a **Coarse-to-Fine (C2F) attention** which can capture more specific semantics from the context towards the aspect category, which achieves the SOTA (1st place on 2018 Nov & 3rd place at present) in SemEval'14 Task 4 ABSA challenges. (**Data & Ranking (MGAN).**)

Hierarchical Attention Transfer Network for Cross-domain Sentiment Classification

AAAI'18, oral

ZHENG LI, YING WEI, YU ZHANG, QIANG YANG

Feb. 2018

- Propose a multi-task learning framework (**Classification & Adversarial & Co-occurrence Learning**) to capture both domain-invariant and domain-specific users' emotional information, which achieves the SOTA in multi-domain Amazon review dataset.
- Develop an attention visualization system based on Hightchart, which can automatically capture the variations of users' emotional expressions across domain (**Code & Video & Demo**).

End-to-End Adversarial Memory Network for Cross-domain Sentiment Classification

IJCAI'17, oral

ZHENG LI, YU ZHANG, YING WEI, YUXIANG WU, QIANG YANG

Aug. 2017

- Propose an end-to-end framework to automatically capture pivot words based on the attention mechanism and adversarial training.

Compressive Perceptual Hashing Tracking

Neurocomputing'17

ZHENG LI, LONG CHEN, JIAN-FEI YANG

2017

Online Visual Tracking via Correlation Filter with Convolutional Networks

ZHENG LI, JIANFEI YANG, JUAN ZHA, CHANG-DONG WANG, WEISHI ZHENG

VCIP'17, oral

May. 2017

- Demo

Compressive Perceptual Hashing Tracking with Online Foreground Learning

ZHENG LI, JIAN-FEI YANG, LONG CHEN, JUAN ZHA

ROBIO'15, oral

Nov. 2015

- Homepage & Demo

Robust Vehicle Tracking Using Perceptual Hashing Algorithm

ZHENG LI, JIANFEI YANG, LONG CHEN, JUAN ZHA

ICMLA'15, oral

Aug. 2015

Long-Term Revenue Maximization Pricing Scheme for Cloud

WEN-KAI HUAN, CHANG-DONG WANG, SHAO-SHU HUAN, ZHENG LI, JIAN-HUANG LAI, LING HUANG

IJSSE journal

Aug. 2015

Scholarships, Honors & Awards

Nov. 2018 **Baidu PhD Fellowship Nomination Awards**, Baidu, awarded to about 20/5000 applicants all over the world.

2017-2019 **AAAI Travel grants 2018, 2019, IJCAI Travel grants 2017.**,

Jun. 2016 **Outstanding Bachelor Awards**, Sun Yat-sen University

Jun. 2016 **Outstanding Bachelor Thesis Awards**, Sun Yat-sen University

Aug. 2015 **China Intelligent Design Competition, Second Prize**, Awarded to Top 5% teams from China

Nov. 2015 **“YongSheng Liu” Outstanding Undergraduate Scholarship**, Top 1% student in DCS Department

Sep. 2015 **First-class Merit Scholarship**, Top 5% student in DCS Department, Sun Yat-sen University

Sep. 2014 **Second-class Merit Scholarship**, Top 10% student in DCS Department, Sun Yat-sen University

Sep. 2014 **ACM-ICPC Competition, Third Prize**, Sun Yat-sen University

Sep. 2013 **Third-class Merit Scholarship**, Top 20% student in DCS Department, Sun Yat-sen University

Talks

Aug. 2018 **Transfer learning for Fine-grained Sentiment Analysis**, Invited talk at WeBank

Mar. 2019 **Exploiting Coarse-to-Fine Task Transfer for Aspect-level Sentiment Classification**, Invited talk at the AAAI'19 sharing forum organized by the Hong Kong Society of Artificial Intelligence and Robotics (HKSAR)

Professional Services

- **Program Committee:** AAAI 2020, ICLR 2020
- **Journal Reviewer:** TBD 2019, JASIST 2019, TALRLIP 2019
- **Conference Secondary Reviewer:** AAAI 2019, IJCAI 2019

Skills

- **Deep learning frameworks:** tensorflow, keras, pytorch, theano, dynet
- **Programming language:** python, matlab, c&c++
- **Others:** highchart (visualization), django, js, shell script