

Irene (Zihui) Li | Résumé

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Education

Yale University, USA

PhD Student (advised by Prof. Dragomir Radev), *Aug. 2017 - May 2022*
Research topics include natural language processing and graph neural networks; other interests are transfer learning, domain adaptation, summarization, general machine learning and NLP with clinical data (EHRs).

University College Dublin, Ireland

Master Degree of Science, **First Honor Degree**
Sept. 2014 - Aug. 2015
Majoring in Data Science. Thesis: *An Online Segmentation Method using Dynamic Time Warping.*

Wuhan Polytechnic University, China

Bachelor Degree of Management (First Degree), **Top 5%**
Sept. 2010 - Jun. 2014
Bachelor's Degree of English Language and Literature (Secondary Degree)

Experiences

University of Tokyo, Japan

Assistant Professor *Aug. 2022 - Now*
Research interests include machine learning, natural language processing and methods in clinical applications.

Tencent AI Lab, Seattle, USA

Research Intern *June 2021 - Aug. 2021*
Applying graph neural networks to solve AMR Coreference Resolution.

IBM Research Almaden, USA

Research Intern *June 2019 - Aug. 2019*
Interned in the Scalable Knowledge Intelligence team, and worked on cross-lingual classification tasks for IBM SystemT.

Baidu Inc., Beijing, China

Research Intern *June 2018 - Aug. 2018*
Worked on text summarization with transfer learning.

Accenture AI TechLab, Ireland

Research Engineer *Apr. 2017 - Jul. 2017*
Worked on applied deep learning models: prediction using LSTM, natural language processing on specific domain texts using CNN and attention-based model.

Adapt Data Center, Ireland

Junior Researcher *Mar. 2016 - Feb. 2017*
Research topic including recommendation systems, domain adaptation and NLP.

IBM Research Dublin, Ireland

Research Intern (Care Manager Team with IBM Watson) *June 2016 - Aug. 2016*

Worked with deep learning models in the healthcare domain, developed CNNs to classify clinical sentences.

Griffith College Dublin, Ireland

Part-time Instructor

Jan. 2016 – May. 2016

Instructor for the course Distributed Systems.

Japan Science and Technology Agency (JST), Ireland

Research Assistant (Big Data Group)

Jun. 2015 – May 2016

Research on Loopy Belief Propagation algorithm and implementations by Swift. Research on large-scale Graph Database algorithm and performance modeling by applying Deep Learning.

Insight Centre for Data Analytics, University College Dublin, Ireland

Research Intern

May 2015 – Aug. 2015

Assisted research fellows on a research of an online segmentation algorithm on sensor-collected data.

Publications

Aosong Feng, **Irene Li**, Yuang Jiang, Rex Ying. *Diffuser: Efficient Transformers with Multi-hop Attention Diffusion for Long Sequences* Authors. AAAI, 2023

Irene Li, Jessica Pan, Jeremy Goldwasser, Neha Verma, Wai Pan Wong, Muhammed Yavuz Nuzumlali, Benjamin Rosand, Yixin Li, Matthew Zhang, David Chang, R. Andrew Taylor, Harlan M. Krumholz and Dragomir Radev. *Neural Natural Language Processing for Unstructured Data in Electronic Health Records: a Review*. Computer Science Review, 2022

Irene Li, Aosong Feng, Hao Wu, Tianxiao Li, Yixin Li, Ruihai Dong and Toyotaro Suzumura. *Heterogeneous Graph Neural Networks for Multi-label Text Classification*. Under review, DLG4NLP Workshop, EMNLP 2022

Irene Li, Linfeng Song, Kun Xu and Dong Yu. *Variational Graph Autoencoding as Cheap Supervision for AMR Coreference Resolution*. ACL, 2022

Irene Li, Vanessa Yan, Dragomir Radev. *Efficient Variational Graph Autoencoders for Unsupervised Cross-domain Prerequisite Chains*. Efficient Natural Language and Speech Processing Workshop, NeurIPS 2021

Irene Li, Prithviraj Sen, Huaiyu Zhu, Yunyao Li and Dragomir Radev. *Zero-shot Instance-Weighting for Cross-lingual Text Classification*. Repl4NLP Workshop, ACL, 2021

Irene Li, Vanessa Yan, Tianxiao Li, Rihao Qu and Dragomir Radev. *Unsupervised Cross-Domain Prerequisite Chain Learning using Variational Graph Autoencoders*. ACL, 2021

Irene Li, Alexander Fabbri, Swapnil Hingmire, and Dragomir Radev. *R-VGAE: Relational-variational Graph Autoencoder for Unsupervised Prerequisite Chain Learning*. COLING, 2020

Irene Li, Yixin Li, Tianxiao Li, Sergio Alvarez-Napagao, Dario Garcia-Gasulla, Toyotaro Suzumura. *What are We Depressed about When We Talk about COVID-19: Mental Health Analysis on Tweets Using Natural Language Processing*. SGAI International Conference on Artificial Intelligence, 2020

Irene Li, Michihiro Yasunaga, Yavuz Nuzumlali, Cesar Caraballo, Shiwani Mahajan, Krumholz, Harlan and Dragomir Radev. *A Neural Topic-Attention Model for Medical Term Abbreviation Disambiguation*. Machine Learning for Health Workshop, NeurIPS 2019

Alexander Fabbri, **Irene Li**, Tianwei She, Suyi Li and Dragomir Radev. *Multi-News: a Large-Scale*

Multi-Document Summarization Dataset and Abstractive Hierarchical Model. ACL, 2019

Irene Li, Alexander Fabbri, Robert Tung and Dragomir Radev. *What Should I Learn First: Introducing LectureBank for NLP Education and Prerequisite Chain Learning*. AACL, 2019

Michihiro Yasunaga, Jungo Kasai, Rui Zhang, Alexander Fabbri, **Irene Li**, Dan Friedman, and Dragomir Radev. *ScisummNet: A Large Annotated Corpus and Content-Impact Models for Scientific Paper Summarization with Citation Networks*. AACL, 2019

Alexander Fabbri, **Irene Li**, Prawat Trairatvorakul, Yijiao He, Wei Tai Ting, Robert Tung, Caitlin Westerfield and Dragomir Radev. *TutorialBank: A Manually-Collected Corpus for Prerequisite Chains, Survey Extraction and Resource Recommendation*. ACL, 2018

Tao Yu, Rui Zhang, Kai Yang, Michihiro Yasunaga, Dongxu Wang, Zifan Li, James Ma, **Irene Li**, Qingning Yao, Shanelle Roman, Zilin Zhang, and Dragomir Radev. *Spider: A Large-Scale Human-Labeled Dataset for Complex and Cross-Domain Semantic Parsing and Text-to-SQL Task*. EMNLP, 2018

Mark Hughes, **Irene Li**, Spyros Kotoulas and Toyotaro Suzumura. *Medical Text Classification using Convolutional Neural Networks*. Informatics for Health Conference, 2017

Professional Skills

Programming: Python, PyTorch, TensorFlow

Techniques: Natural Language Processing, Deep Learning, Neural Graph Networks, Summarization, Machine Learning, Transfer Learning

Links

Personal Blog: ireneli.eu

Google Scholar: <https://scholar.google.com/citations?user=JuYPjCMAAAAJ&hl=en>

Linkedin: <https://ie.linkedin.com/in/irenelizihui>

Github: <https://github.com/IreneZihuiLi>

Referrers

Prof. Dragomir Radev: Professor, Computer Science. **Yale University, USA**
dragomir.radev@yale.edu

Dr. Yunyao Li: Head of Machine Learning, Apple Knowledge Platform. **Apple, USA**
yunyaoli@apple.com

Prof. Ruihai Dong: Assistant Professor, Computer Science. **University College Dublin, Ireland**
ruihai.dong@ucd.ie