

Victoria X. Lin

SENIOR RESEARCH SCIENTIST

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Research Interest

Natural Language Understanding, AI for Productivity, AI Fairness and Accountability

Work Experience

Salesforce Research

Palo Alto, CA, USA

SENIOR RESEARCH STAFF

Jun. 2018 - present

- Conduct natural language understanding research focusing on semantic parsing, natural language interface and question answering
- Discover new research problems in AI for productivity, design new solutions and release new benchmark datasets
- Mentor research interns and collaborate with the wider research community on a broader range of NLP and machine learning problems

RESEARCH SCIENTIST

Oct. 2017 - Jun. 2018

- Conduct natural language understanding research focusing on knowledge graph reasoning and question answering

Microsoft Research

Redmond, WA, USA

RESEARCH INTERN

Jun. 2015 - Sep. 2015

- Collaborate with senior researchers on machine reading for precision medicine
- Develop a novel algorithm and baselines for learning compositional embeddings of relation paths in knowledge bases and text

Allen Institute for Artificial Intelligence

Seattle, WA, USA

RESEARCH INTERN

Jul. 2014 - Sep. 2014

- Collaborate with senior researchers on machine reading for answering science exam questions
- Design and experiment with an information extraction approach that populates a hand-engineered physics knowledge schema for answering complex physics questions

Conference Publications

Bridging Textual and Tabular Data for Cross-Domain Text-to-SQL Semantic Parsing.

Xi Victoria Lin, Richard Socher, Caiming Xiong

EMNLP Findings 2020

Photon: A Robust Cross-Domain Text-to-SQL System.

Jichuan Zeng*, Xi Victoria Lin, Caiming Xiong, Richard Socher, Michael R. Lyu, Irwin King, Steven C.H. Hoi

ACL Demo 2020

Double-Hard Debias: Tailoring Word Embeddings for Gender Bias Mitigation

Tianlu Wang, Xi Victoria Lin, Nazeen Fatema Rajani, Bryan McCann, Vicente Ordonez and Caiming Xiong

ACL 2020

CoSQL: A Conversational Text-to-SQL Challenge Towards Cross-Domain Natural Language Interfaces to Databases

Tao Yu, Rui Zhang, Heyang Er, Suyi Li, Eric Xue, Bo Pang, Xi Victoria Lin, Yi Chern Tan, Tianze Shi, Zihan Li, Youxuan Jiang, Michihiro Yasunaga, Sungrok Shim, Tao Chen, Alexander Fabbri, Zifan Li, Luyao Chen, Yuwen Zhang, Shreya Dixit, Vincent Zhang, Caiming Xiong, Richard Socher, Walter Lasecki and Dragomir Radev

EMNLP 2019

Editing-based SQL Query Generation for Cross-Domain Context-Dependent Questions

Rui Zhang, Tao Yu, Heyang Er, Sungrok Shim, Eric Xue, Xi Victoria Lin, Tianze Shi, Caiming Xiong, Richard Socher and Dragomir Radev

EMNLP 2019

SParC: Cross-Domain Semantic Parsing in Context

Tao Yu, Rui Zhang, Michihiro Yasunaga, Yi Chern Tan, Xi Victoria Lin, Suyi Li, Heyang Er, Irene Li, Bo Pang, Tao Chen, Emily Ji, Shreya Dixit, David Proctor, Sungrok Shim, Jonathan Kraft, Vincent Zhang, Caiming Xiong, Richard Socher, Dragomir Radev

ACL 2019

Multi-Hop Knowledge Graph Reasoning with Reward Shaping

Xi Victoria Lin, Richard Socher and Caiming Xiong

EMNLP 2018

NL2Bash: A Corpus and Semantic Parser for Natural Language Interface to the Linux Operating System

Xi Victoria Lin, Chenglong Wang, Luke Zettlemoyer and Michael D. Ernst

LREC 2018

Compositional Learning of Embeddings for Relation Paths in Knowledge Bases and Text

Kristina Toutanova, [Xi Victoria Lin](#), Scott Wen-tau Yih, Hoifung Poon and Chris Quirk

ACL 2016

Workshop and Other Publications

Program Synthesis from Natural Language Using Recurrent Neural Networks

[Xi Victoria Lin](#), Chenglong Wang, Deric Pang, Kevin Vu, Luke Zettlemoyer, Michael D. Ernst

UWCSE-TR 2017

Multi-label Learning with Posterior Regularization

[Xi Victoria Lin](#), Sameer Singh, Luheng He, Ben Taskar, and Luke Zettlemoyer

NeurIPS-MLNLP 2014

Fine-grained Named Entity Classification in Machine Reading

[Xi Victoria Lin](#)

Oxford Thesis 2011

Preprints

DART: Open-Domain Structured Data Record to Text Generation

Dragomir Radev, Rui Zhang, Amrit Rau, Abhinand Sivaprasad, Chiachun Hsieh, Nazneen Fatema Rajani, Xiangru Tang, Aadit Vyas, Neha Verma, Pranav Krishna, Yangxiaokang Liu, Nadia Irwanto, Jessica Pan, Faiaz Rahman, Ahmad Zaidi, Murori Mutuma, Yasin Tarabar, Ankit Gupta, Tao Yu, Yi Chern Tan, [Xi Victoria Lin](#), Caiming Xiong, Richard Socher

ArXiv 2020

* indicates equal contribution

Patents

Multi-hop knowledge graph reasoning with reward shaping

[Xi Victoria Lin](#), Richard Socher, Caiming Xiong

US Patent App. 16/051,309

Talks

Creating The Future Of AI: How Salesforce Research Advances AI For CRM (co-speaker)

Dreamforce 2019

Technical Writing

Talk to Your Data: One Model, Any Relational Database.

Einstein.ai 2020

Software

Photon v1.1: <https://naturalsql.com/>

Salesforce, 2020

Photon is a deep learning based cross-domain natural language interface to databases that focuses on factual look-up questions. It allows end users to query a number of relational DBs in natural language, including DBs it has never been trained on.

Tellina v1.0: <http://tellina.rocks/>

2017

Tellina is an end-user scripting assistant that can be queried via natural language. It translates a natural language sentence typed by the user into a piece of short, executable script.

Education

University of Washington

PH.D. GRADUATED AS M.SC. IN COMPUTER SCIENCE

Seattle, WA, USA

Aug. 2017

University of Pennsylvania

PH.D. GRADUATED AS M.SC. IN COMPUTER SCIENCE

Philadelphia, PA, USA

May. 2013

University of Oxford

M.Sc. IN COMPUTER SCIENCE

Oxford, UK

Sep. 2011

The Hong Kong Polytechnic University

B.ENG. IN ELECTRONIC AND INFORMATION ENGINEERING

Kowloon, HK

Aug. 2010

Honors & Awards

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|------|---|------------------------|
| 2014 | Travel Award , NIPS Women in Machine Learning Workshop | Montreal, Québec, CA |
| 2011 | Doctoral Fellowship , University of Pennsylvania | Philadelphia, PA, USA |
| 2010 | Best Academic Performance Award , Department of Electronic and Information Engineering, HKPU | Kowloon, HK |
| 2010 | Scholarship , Hong Kong SAR Government | Kowloon, HK |
| 2009 | Scholarship , Hong Kong Polytechnic University Post-Entry | Kowloon, HK |
| 2009 | Scholarship , Hong Kong & Kowloon Electrical Appliances Merchants Association | Kowloon, HK |
| 2009 | Student Travel Award , Apple Worldwide Developers Conference | San Francisco, CA, USA |

Service

ORGANIZING COMMITTEE

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| 1st Workshop on Interactive and Executable Semantic Parsing (Intex-Sempar) | EMNLP 2020 |
| Competition for Automatic Translation of English to Bash (NLC2CMD) | NeurIPS 2020 |

PROGRAM COMMITTEE

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|------|---------------------------|
| 2020 | ACL, EMNLP, ACL, NLI |
| 2019 | ICML, ACL, NAACL |
| 2018 | ACL, EMNLP, COLING, CoNLL |
| 2017 | ACL, EMNLP |
| 2016 | EMNLP |
| 2015 | EMNLP |

Teaching

CIS 520: Machine Learning

University of Pennsylvania

TEACHING ASSISTANT

Sep. 2012 - Dec. 2012

- Making exam problems; answering Piazza questions; holding office hours; grading

Programming Skills

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| Languages | Python, Java, C++, Matlab, R, Lua, JavaScript, HTML, CSS |
| Deep Learning | Pytorch, Tensorflow |
| Web | Django |