# Tianxiao Shen

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## Education

**Massachusetts Institute of Technology**                                                           2016.9 – 2022.5
Ph.D., Electrical Engineering and Computer Science    GPA: 5.0/5.0
Advisors: Regina Barzilay, Tommi Jaakkola

**Tsinghua University**                                                                             2012.9 – 2016.6
B.Eng., Computer Science and Technology    GPA: 93.8/100
Special Pilot CS Class (Yao Class), supervised by Andrew C. Yao (Turing Award 2000)

## Research Interests

Natural Language Processing, Artificial Intelligence, Machine Learning, Deep Learning

## Experience

**Google DeepMind**                                                                                 2024.9 – Present
Research Scientist

**Character.AI**                                                                                    2024.7 – 2024.9
Member of Technical Staff

**University of Washington**                                                                        2022.7 – 2024.7
Postdoctoral Scholar
Hosts: Yejin Choi, Zaid Harchaoui

**Princeton NLP Group**                                                                             2020.6 – 2020.9
Visiting Student
Host: Karthik Narasimhan

**Facebook AI Research**                                                                            2018.6 – 2018.8
Research Intern
Mentor: Marc'Aurelio Ranzato

**Microsoft Research Asia**                                                                         2016.2 – 2016.7
Research Intern, Knowledge Computing Group
Mentor: Chin-Yew Lin

**Microsoft Research Asia**                                                                         2014.6 – 2014.12
Research Intern, Visual Computing Group
Mentor: Jingdong Wang

# Publications

(* denotes equal contribution)

- **FiLM: Fill-in Language Models for Any-Order Generation**
  Tianxiao Shen, Hao Peng, Ruoqi Shen, Yao Fu, Zaid Harchaoui, Yejin Choi
  *Preprint*, 2023.

- **Generating Sequences by Learning to [Self-]Correct**
  Sean Welleck*, Ximing Lu*, Peter West, Faeze Brahman, Tianxiao Shen, Daniel Khashabi, Yejin Choi
  *International Conference on Learning Representations (ICLR)*, 2023.

- **Text Style Transfer with Confounders**
  Tianxiao Shen, Regina Barzilay, Tommi Jaakkola
  *Preprint*, 2022.

- **Controlling Directions Orthogonal to a Classifier**
  Yilun Xu, Hao He, Tianxiao Shen, Tommi Jaakkola
  *International Conference on Learning Representations (ICLR)*, 2022. ***Spotlight***

- **Blank Language Models**
  Tianxiao Shen*, Victor Quach*, Regina Barzilay, Tommi Jaakkola
  *Empirical Methods in Natural Language Processing (EMNLP)*, 2020.

- **Educating Text Autoencoders: Latent Representation Guidance via Denoising**
  Tianxiao Shen, Jonas Mueller, Regina Barzilay, Tommi Jaakkola
  *International Conference on Machine Learning (ICML)*, 2020.

- **Learning to Make Generalizable and Diverse Predictions for Retrosynthesis**
  Benson Chen, Tianxiao Shen, Regina Barzilay, Tommi Jaakkola
  *Preprint*, 2019.

- **Mixture Models for Diverse Machine Translation: Tricks of the Trade**
  Tianxiao Shen*, Myle Ott*, Michael Auli, Marc'Aurelio Ranzato
  *International Conference on Machine Learning (ICML)*, 2019. ***Long talk***

- **Style Transfer from Non-Parallel Text by Cross-Alignment**
  Tianxiao Shen, Tao Lei, Regina Barzilay, Tommi Jaakkola
  *Neural Information Processing Systems (NeurIPS)*, 2017. ***Spotlight***

- **Making Dependency Labeling Simple, Fast and Accurate**
  Tianxiao Shen, Tao Lei, Regina Barzilay
  *North American Chapter of the Association for Computational Linguistics (NAACL)*, 2016.

# Invited Talks

- **Fill-in Language Models**
  Guest lecture at UIUC CS 598 Efficiency in NLP, Nov 2023

- **Text Style Transfer with Confounders**

  NetMIT, Oct 2021

  IBM, Sep 2021

  MIT JRP on "Next Generation NLP Technologies for Low Resource Tasks", Jun 2021

- **Blank Language Models**

  AI Time, Dec 2020

  Princeton NLP, Aug 2020

  MIT Computational Psycholinguistics Lab, Jul 2020

- **Educating Text Autoencoders: Latent Representation Guidance via Denoising**

  MIT MLTea, Jul 2020

  IIIS-Haihua Frontier Seminar Series, Tsinghua University, Jul 2019

- **Mixture Models for Diverse Machine Translation**

  AI Research Week, MIT-IBM Watson AI Lab, Sep 2019

  Microsoft Research AI Breakthroughs workshop, Sep 2019

- **Language Style Transfer**

  Harvard Applied Statistics Seminar, Mar 2018

  NetMIT, Mar 2018

  Twitter Cambridge, Dec 2017

  Harvard NLP, Nov 2017

  Guest lecture at MIT 6.864 Advanced Natural Language Processing, Nov 2017

  MIT Machine Learning Tea, Oct 2017

# Service

**Conference reviewing:** ICML 2019, 2020, 2021, NeurIPS 2019, 2021, 2022, 2024, ICLR 2021, 2022, AISTATS 2022, CoNLL 2020, AAAI 2019, Workshop on DeepGenStruct at ICLR 2019
**Mentoring:** Women in Machine Learning workshop at NIPS 2017

# Skills

**Languages and tools:** Python, C, C++, Java, MATLAB, LaTex, Shell, Git, Slurm
**Libraries:** PyTorch, Tensorflow, JAX, Transformers, Lightning, Jupyter

# Selected Awards and Honors

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|---|---|
| D. E. Shaw Fellowship | 2017 |
| WeTech Qualcomm Global Scholarship | 2015 |
| Finalist, Top-Grade Scholarship (10 best undergraduate students a year), Tsinghua University | 2015 |
| 12.9 Scholarship, Tsinghua University | 2015 |
| Chinese Team Candidate (top 6), International Olympiad in Informatics (IOI) | 2012 |
| Best Female Contestant, Silver Medal, Chinese National Olympiad in Informatics (NOI) | 2011 |