# Sidi **Lu**

Undergraduate Student · ACM Honors Class, SJTU

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*"Embrace solitude to better understand communication."*

## **Res**earch Interests

My research interests lie in unsupervised learning of sequential data, including improving the training of auto-aggressive models and learning a structural form of such data via modern machine learning approaches.

My previous work especially focuses on natural language generation, neurally-guided Bayesian Program Learning and building combinatorially-generalizable deep learning systems. I'm also interested in improving the sample efficiency of Reinforcement Learning/Inverse Reinforcement Learning systems.

## **Edu**cation

**ACM Honors Class, Zhiyuan College(Shanghai Jiao Tong University)** *Shanghai, P.R.C.*

B.S. in Computer Science (Zhiyuan Honors Program) *Sept. 2015 - Exp. Jul. 2019*

- ACM Honors Class accepts only top 5% out of all Computer Science majored students.

## **Lan**guage Skills

2018 **TOEFL**, Total: 104 (L28, S23, R28, W25)
2018 **GRE**, Total: 320 (V150, Q170, W4.0)

## **Publ**ication

**CoT: Cooperative Training for Generative Modeling of Discrete Data** *ICLR-2019 (Under Review, 7-7-7)*

Sidi Lu, Lantao Yu, Siyuan Feng, Yaoming Zhu, Weinan Zhang, Yong Yu *2018*

- Proposed the whole idea.
- Designed and finished most experiments.
- Did most of the theoretical analysis.
- Finished the majority of the paper's writing.

**Long Text Generation via Adversarial Training with Leaked Information** *AAAI-2018 (Accepted, Poster)*

Jiaxian Guo, Sidi Lu, Han Cai, Weinan Zhang, Yong Yu, Jun Wang *2017*

- Proposed the training technique called bootstrapped rescaled activation, which stabilizes the training process.
- Helped to reproduce part of the baselines.
- One of the main contributors of the paper's writing.

**Texygen: A Benchmarking Platform for Text Generation Models** *SIGIR-2018 (Accepted, Short)*

Yaoming Zhu, Sidi Lu, Lei Zheng, Jiaxian Guo, Weinan Zhang, Jun Wang, Yong Yu *2018*

- Proposed part of the academical ideas of the project.
- Helped in writing the paper.

**Neural Text Generation: Past, Present and Beyond** *Informal Essay*

Sidi Lu, Yaoming Zhu, Weinan Zhang, Yong Yu *2018*

- Summarized the research of training an auto-aggressive discrete generative model, with necessary theoretical and empirical analysis.
- Pointed out a few pain points of current attempts in this field, proposed several possible future directions.
- Served as an important prospective work of the paper "CoT".

## **Res**earch Experience

**Visiting Student (CSAIL, Massachusetts Institute of Technology)** *Cambridge, MA, U.S.A.*

Research Internship *Jul. 2018 - PRESENT*

- Invited by and under supervision of Professor Joshua B. Tenenbaum.
- Studying the extension of the power of Bayesian Program Learning.
- Having attempts at combining the power of deep neural networks and BPL to improve the combinatorial generalization ability and sample efficiency of the learning system.

**APEX Lab, Shanghai Jiao Tong University** *Shanghai, P.R.C.*

UNDERGRADUATE MEMBER *Jun. 2017 - PRESENT*

- Under supervision of Professor Weinan Zhang and Professor Yong Yu.
- Working on improving the training of auto-aggressive discrete generative models (typically, text generation models)
- Studying the inverse reinforcement learning problem and Imitation Learning algorithms.

## Teaching Experience

TEACHING ASSISTANT

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|---|---|---|
| 2016 | **Junior TA**, Programming | *Shanghai Jiao Tong University* |
| 2017 | **Senior TA**, Data Structure | *Shanghai Jiao Tong University* |
| 2017 | **Senior TA**, Programming Practice | *Shanghai Jiao Tong University* |
| 2018 | **Senior TA**, Computer System (II): Operating System | *Shanghai Jiao Tong University* |
| 2018 | **Junior TA**, Compiler: Practice and Design | *Shanghai Jiao Tong University* |

## Open-sourse Projects

**Code for reproducing results in "CoT: Cooperative Training for Generative Modeling of Discrete Data"** *Available on GitHub*

SOLE CONTRIBUTOR *Jul. 2018*

- `https://github.com/desire2020/CoT`

**Code for reproducing results in "Adversarial Ranking for Language Generation"** *Available on GitHub*

FORKED FROM THE SEQGAN REPOSITORY *Jul. 2017*

- `https://github.com/desire2020/RankGAN`

**Unofficial Implementation of "Training RNNs as Fast as CNNs"** *Available on GitHub*

MAIN CONTRIBUTOR *Sep. 2017*

- `https://github.com/desire2020/SRU-tensorflow`

**ALeX: A-Light-educational-*niX OS kernel** *Available on GitHub (incomplete)*

SOLE CONTRIBUTOR *May. 2018*

- `https://github.com/desire2020/ALeX`

**M♯: A C-Java Hybrid Programming Language and its Compiler** *Available on Bitbucket*

SOLE CONTRIBUTOR *Jun. 2017*

- `https://bitbucket.org/desire2020/msharp`

**Back-end of an Online Course-work AI Competition Server** *Available on GitHub*

FORKED FROM REPOSITORY "ACM-2015-AI-SERVER" *Nov. 2016*

- `https://github.com/desire2020/ACM-2016-AI-Server`