

Shengyu Feng

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GHC 5545, 5000 Forbes Avenue, Pittsburgh, PA, 15213-8213

Research Interests I am interested in solving combinatorial optimization problems and other complex reasoning tasks with machine learning models, including statistical sampling methods, neural solvers and large language models.

Education **Carnegie Mellon University (CMU)** Pittsburgh, PA, U.S.
Ph.D., Language Technology Institute: GPA: 4.04/4.30 Aug. 2022 – Present
Advisor: Dr. Yiming Yang

University of Illinois at Urbana-Champaign (UIUC) Champaign, IL, U.S.
M.S., Computer Science: GPA: 3.91/4.00 Aug. 2020 – May 2022
Advisor: Dr. Hanghang Tong

University of Michigan (UMich) Ann Arbor, MI, U.S.
B.S.E., Computer Science: GPA: 4.00/4.00 Sep. 2018 – May 2020

Shanghai Jiao Tong University (SJTU) Shanghai, China
B.S., Electrical and Computer Engineering: GPA: 3.67/4.00 Sep. 2016 – Aug. 2020

Research **Apple** Remote
Internship Research intern May 2024 - Aug. 2024

Microsoft Research Remote
Research intern May 2022 - Aug. 2022

Intel AI Lab Remote
Graduate technical intern May 2021 - Aug. 2021

Publications & Preprints **Step-by-Step Reasoning for Math Problems via Twisted Sequential Monte Carlo**
Shengyu Feng, Xiang Kong, Shuang Ma, Aonan Zhang, Dong Yin, Chong Wang, Ruoming Pang and Yiming Yang
Under Review

Sampling-Enhanced Large Neighborhood Search for Solving Integer Linear Programs

Shengyu Feng, Zhiqing Sun and Yiming Yang
Under Review

SORREL: Suboptimal-Demonstration-Guided Reinforcement Learning for Learning to Branch

Shengyu Feng, Yiming Yang
Annual AAAI Conference on Artificial Intelligence (AAAI), 2025

ARIEL: Adversarial Graph Contrastive Learning

Shengyu Feng, Baoyu Jing, Yada Zhu, Hanghang Tong
ACM Transactions on Knowledge Discovery from Data (TKDD)

Concept Discovery for Fast Adaptation

Shengyu Feng, Hanghang Tong
SIAM International Conference on Data Mining (SDM), 2023

Exploiting Long-Term Dependencies for Generating Dynamic Scene Graphs

Shengyu Feng, Subarna Tripathi, Hesham Mostafa, Marcel Nassar and Somdeb Majumdar
IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), 2023

X-GOAL: Multiplex Graph Prototypical Contrastive Learning

Baoyu Jing, Shengyu Feng, Yuejia Xiang, Xi Chen, Yu Chen and Hanghang Tong
ACM International Conference on Information and Knowledge Management (CIKM), 2022

Adversarial Graph Contrastive Learning with Information Regularization

Shengyu Feng, Baoyu Jing, Yada Zhu and Hanghang Tong
ACM Web Conference (WWW), 2022

Batch Reinforcement Learning Through Continuation Method

Yijie Guo, Shengyu Feng, Nicolas Le Roux, Ed Chi, Honglak Lee and Minmin Chen
International Conference on Learning Representations (ICLR), 2021

Memory Based Trajectory-conditioned Policies for Learning from Sparse Rewards

Yijie Guo, Jongwook Choi, Marcin Moczulski, Shengyu Feng, Samy Bengio, Mohammad Norouzi and Honglak Lee
Neural Information Processing Systems (NeurIPS) 2020

Honors & Awards	Siebel Scholars for class 2022 (UIUC)	2021
	University Merit Student (SJTU)	2017, 2018
	Interdisciplinary Contest in Modeling Meritorious Winner	2017
	Dean's List (UMich, SJTU)	Every semester
Teaching Experiences	Teaching Assistant, UIUC CS 445: Computational Photography Instructor: Derek Hoime Instructional Aide, UMich EECS 442: Computer Vision Instructor: Justin Johnson (Winter 2020), David Fouhey (Fall 2019)	Spring 2021, Fall 2020 Winter 2020, Fall 2019
Professional Services	Reviewer, <i>International Conference on Learning Representations (ICLR)</i> Reviewer, <i>Neural Information Processing Systems (NeurIPS)</i> Reviewer, <i>International Conference on Machine Learning (ICML)</i>	2022-2024 2021-2024 2022-2024
Skills	Programming languages: Python, C/C++, Javascript, Java, R and Matlab Deep learning frameworks: PyTorch, Tensorflow and Pytorch Geometric	