Shengyu Feng

shengyuf@andrew.cmu.edu   (734) 882-8879

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 Internship

Apple — Seattle, WA, U.S.
Research intern — May 2024 - Aug. 2024

Microsoft Research — Bellevue, WA, U.S.
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
*International Conference on Learning Representations (**ICLR**), 2025*

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

*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 Exeperiences

Teaching Assistant, UIUC   Spring 2021, Fall 2020
CS 445: Computational Photography
Instructor: Derek Hoime

Instructional Aide, UMich   Winter 2020, Fall 2019
EECS 442: Computer Vision
Instructor: Justin Johnson (Winter 2020), David Fouhey (Fall 2019)

Professional Services

Reviewer, *International Conference on Learning Representations (**ICLR**)* 2022-2024
Reviewer, *Neural Information Processing Systems (**NeurIPS**)* 2021-2024
Reviewer, *International Conference on Machine Learning (**ICML**)* 2022-2024

Skills

Programming languages: Python, C/C++, Javascript, Java, R and Matlab
Deep learning frameworks: PyTorch, Tensorflow and Pytorch Geometric