

Yiren Jian

PhD Student

Computer Science, Dartmouth College

✉ yiren.jian.gr@dartmouth.edu | 🏠 yiren-jian.github.io | 📷 yiren-jian

My research spans a wide range of topics within the field of machine learning, focusing on computer vision, natural language processing and computational science. Specifically, my work involves the pre-training of generative models for image-text and video-text tasks, the investigation of multi-modal sentence embeddings, the exploration of few-shot learning in both vision and language domains, as well as the application of AI in scientific contexts.

Professional Experience

Research Scientist Intern, ByteDance (TikTok) AML

Bellevue, WA

Develop generative video-language models for video summarization.

June. 2023 - Sept. 2023

Advisor: Yunzhe Tao

Research Scientist Intern, Snap Research

Palo Alto, CA

Develop neural speakers for affective image captioning.

June. 2022 - Sept. 2022

Advisor: Panos Achlioptas

Research Scientist Intern, NEC Labs America

Princeton, NJ

Develop physical-augmented ML models for precision immunotherapy.

June. 2021 - Sept. 2021

Advisor: Renqiang (Martin) Min

Education

Dartmouth College

Hanover, NH, USA

Doctor of Philosophy - Computer Science

Sept. 2018 - Jan. 2024 (expected)

Advisor: Soroush Vosoughi

The George Washington University

Washington DC, USA

Master of Science - Physics

Sept. 2015 - May. 2017

Advisor: Chen Zeng

Huazhong University of Science and Technology

Wuhan, China

Bachelor of Science - Physics

Sept. 2011 - May. 2015

Thesis advisor: Yi Xiao

Publications

[P16] Bootstrapping Vision-Language Learning with Decoupled Language Pre-training

preprint, 2023

Yiren Jian, Chongyang Gao, Soroush Vosoughi

[P15] Knowledge from Large-Scale Protein Contact Prediction Models Can Be Transferred to the Data-Scarce RNA Contact Prediction Task

preprint, 2023

Yiren Jian[†], Chongyang Gao, Chen Zeng, Yunjie Zhao and Soroush Vosoughi[†]

[P14] Evaluating Native-like Structures of RNA-protein Complexes Through the Deep Learning Method

Nature Communications, 2023

Chengwei Zeng[#], Yiren Jian[#], Soroush Vosoughi, Chen Zeng, Yunjie Zhao

[P13] Non-Linguistic Supervision for Contrastive Learning of Sentence Embeddings

Advances in Neural Information Processing Systems, 35

Yiren Jian, Chongyang Gao, Soroush Vosoughi

[P12] T-Cell Receptor-Peptide Interaction Prediction with Physical Model Augmented Pseudo-Labeling

In Proceedings of the 28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining

Yiren Jian, Erik Kruus, Martin Renqiang Min

[P11] Embedding Hallucination for Few-shot Language Fine-tuning

In Proceedings of the 2022 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies

Yiren Jian, Chongyang Gao, Soroush Vosoughi

[P10] Contrastive Learning for Prompt-based Few-shot Language Learners

In Proceedings of the 2022 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies

Yiren Jian, Chongyang Gao, Soroush Vosoughi

[P9] Label Hallucination for Few-Shot Classification

Proceedings of the 36th AAAI Conference on Artificial Intelligence

Yiren Jian, Lorenzo Torresani

[P8] MetaPix: Domain Transfer for Semantic Segmentation by Meta Pixel Weighting

Image and Vision Computing, 2021

Yiren Jian, Chongyang Gao

[P7] Task Meta-Transfer from Limited Parallel Labels

Meta-Learning Workshop at Neural Information Processing Systems, 2020

Yiren Jian, Karim Ahmed, Lorenzo Torresani

[P6] DIRECT: RNA Contact Predictions by Integrating Structural Patter

BMC Bioinformatics, 2019

Yiren Jian, Xiaonan Wang, Jiadi Qiu, Huiwen Wang, Zhichao Liu, Yunjie Zhao, Chen Zeng

[P5] Trace, Machine Learning of Signal Images for Trace-Sensitive Mass Spectrometry: A Case Study from Single-Cell Metabolomics

Analytical Chemistry, 2019

Zhichao Liu, Erika P. Portero, **Yiren Jian**, Yunjie Zhao, Rosemary M. Onjiko, Chen Zeng, Peter Nemes

[P4] Design of Tat-activated Cdk9 inhibitor

Journal of Peptide Research and Therapeutics, 2019

Yunjie Zhao, Hao Chen, Chenghang Du, **Yiren Jian**, Haotian Li, Yi Xiao, Mohammed Saifuddin, Fatah Kashanchi, and Chen Zeng

[P3] Rbind: computational network method to predict the binding sites of RNA molecules

Bioinformatics, 2018

Kaili Wang[#], **Yiren Jian**[#], Huiwen Wang, Chen Zeng and Yunjie Zhao

[P2] Computational study of non-catalytic T-loop pocket on CDK proteins for drug development

Chinese Physics B, 2017

Huiwen Wang, Kaili Wang, Zeyu Guan, **Yiren Jian**, Ya Jia, Fatah Kashanchi, Chen Zeng, Yunjie Zhao

[P1] Network analysis reveals the recognition mechanism for dimer formation of bulb-type lectins

Scientific Report, 2017

Yunjie Zhao[#], **Yiren Jian**[#], Zhichao Liu, Hang Liu, Qin Liu, Chanyou Chen, Zhangyong Li, Lu Wang, H. Howie Huang, Chen Zeng

Patents

T-cell receptor repertoire selection prediction with physical model augmented pseudo-labeling (NEC Labs America)

Academic Services

- 2023 **Invited Reviewer**, Northern European Journal of Language Technology
- 2023 **Invited Reviewer**, IEEE/CVF Winter Conference on Applications of Computer Vision
- 2023 **Invited Reviewer**, Conference on Neural Information Processing Systems
- 2023 **External Reviewer**, Annual Meeting of the Association for Computational Linguistics

Teaching Experience

2019, 2021	Graduate Teaching Assistant , Deep Learning (graduate-level course)	<i>Dartmouth</i>
2021-2023	Graduate Teaching Assistant , Machine Learning (graduate-level course)	<i>Dartmouth</i>
2018	Graduate Teaching Assistant , Machine Learning (graduate-level course)	<i>Dartmouth</i>
2015-2016	Graduate Teaching Assistant , University Physics (undergraduate course)	<i>GWU</i>