

EDUCATION

Princeton University Princeton, NJ
Ph.D. in Computer Science, Advisor: Danqi Chen 2024–Current

Princeton University Princeton, NJ
M.S.E. in Computer Science, GPA: 4.00/4.00 2023–2024
Thesis: “Long-Context Language Modeling with Parallel Context Encoding”, Advised by Danqi Chen.

Princeton University Princeton, NJ
B.S.E. in Computer Science, Highest Honors (*summa cum laude*), GPA: 3.99/4.00 2019–2023
Thesis: “How to Answer a Question? Rethinking Open-Domain Question Answering with Multi-Type Questions”, Advised by Danqi Chen.

- **Relevant Courses:** Advanced Topics: Understanding Large Language Models (graduate level), Advanced Topics: Systems and Machine Learning (graduate level), Advanced Computer Vision (graduate level), Advanced Topics: Embodied Natural Language Understanding (graduate level), Natural Language Processing

PUBLICATIONS

1. **Howard Yen**, Tianyu Gao, Minmin Hou, Ke Ding, Daniel Fleischer, Peter Izsak, Moshe Wasserblat, and Danqi Chen. “HELMET: How to Evaluate Long-Context Language Models Effectively and Thoroughly”. Preprint 2024. [Paper] [Code]
2. Tianyu Gao*, Alexander Wettig*, **Howard Yen**, and Danqi Chen. “How to Train Long-Context Language Models (Effectively)”. Preprint 2024. [Paper][Code]
3. Hongjin Su*, **Howard Yen***, Mengzhou Xia*, Weijia Shi, Niklas Muennighoff, Han-yu Wang, Haisu Liu, Quan Shi, Zachary S. Siegel, Michael Tang, Ruoxi Sun, Jinsung Yoon, Serkan O. Arik, Danqi Chen, Tao Yu. “BRIGHT: A Realistic and Challenging Benchmark for Reasoning-Intensive Retrieval”. Preprint 2024. [Paper][Code]
4. **Howard Yen**, Tianyu Gao, and Danqi Chen. “Long-Context Language Modeling with Parallel Context Encoding”. In Proc. of the 62nd Annual Meeting of the Association for Computational Linguistics (ACL 2024). [Paper][Code]
5. Ryan Liu, **Howard Yen**, Raja Marjeh, Thomas L. Griffiths, and Ranjay Krishna. “Optimizing Interpersonal Communication by Simulating Audiences with Large Language Models”. Preprint 2023. [Paper] [Code]
6. Tianyu Gao, **Howard Yen**, Jiatong Yu, and Danqi Chen. “Enabling Large Language Models to Generate Text with Citations”. In Proc. of the 2023 Conference on Empirical Methods in Natural Language Processing (EMNLP 2023). [Paper] [Code]
7. **Howard Yen**, Tianyu Gao, Jinhyuk Lee, and Danqi Chen. “MoQA: Benchmarking Multi-Type Open-Domain Question Answering”. In Proc. of the 3rd Workshop on Dialogue and Conversational Question Answering (DialDoc @ ACL 2023). [Paper] [Code]

* denotes equal contribution.

INDUSTRY EXPERIENCE

Meta Reality Labs

Seattle, Washington

Software Engineering Intern

Summer 2022

- Improved automatic speech recognition generalization with semantic-aware speech augmentation
- Investigated the effect of augmentation techniques such as pauses, word duplication, and semantic-aware phrase replacement on training end-to-end automatic speech recognition and natural language understanding models. Our method achieved up to a 1% improvement on the Spoken Task Oriented Parsing (STOP) dataset.

Facebook AI Applied Research

Menlo Park, California

Software Engineering Intern

Summer 2021

- Generalization of gradient approximation algorithms on downstream tasks
- Analyzed the generalization ability of gradient approximation algorithms such as FetchSGD for CV and NLP downstream tasks. We achieved more than 80% reduction in communication costs with less than 5% performance drop on CIFAR10, CelebA, and Sent140.

TEACHING

- **Graduate Teaching Assistant** at Princeton University Spring 2024
Natural Language Processing (COS484)
- **Graduate Teaching Assistant** at Princeton University Fall 2023
Introduction to Machine Learning (COS324)
- **Research Instructor** at Princeton University Summer 2023
Princeton AI4ALL Summer Camp
- **Undergraduate Course Assistant** at Princeton University Spring 2022, Spring 2023
Natural Language Processing (COS484)
- **Undergraduate Course Assistant** at Princeton University Spring 2020 – Fall 2022
Algorithms and Data Structures (COS226)

SCHOLARSHIPS AND AWARDS

- Tau Beta Pi 2023
- Sigma Xi 2023
- Sigma Xi Book Award 2023
- Phi Beta Kappa 2022–2023
- Outstanding Student Teaching Award 2023
- International Collegiate Programming Contest (ICPC) North America Finalist 2021
- Shapiro Prize for Academic Excellence 2021
- Citadel Terminal Live 2nd Place 2020
- North Dallas Toyota Scholarship 2019

INVITED TALK

- NVIDIA, “HELMET: How to Evaluate Long-Context Language Models Effectively and Thoroughly” 2024/10
- Sierra.AI, “Enabling Large Language Models to Generate Text with Citations” 2023/08

EXTRACURRICULAR ACTIVITIES

- Vice Chair at Association for Computing Machinery (ACM) at Princeton University 2019–2023
Practice problem-solving skills and algorithm and data structure optimization through competitions like ICPC. Host the annual Princeton Computer Science Contest: planning logistics, contacting sponsors, and writing problems.
- Design and Development Team Member at Research Innovation Design 2020–2022
Conduct user interviews on the course selection process for college students to find ways to improve students' course selection experiences and develop a web app that integrates calendar and course reviews in ReactJS. Continuously iterate through designs using Figma to incorporate user feedback.