Siyan (Sylvia) Li

PhD Student · Columbia University

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Education

Columbia University *New York, NY*
PhD in Computer Science *2023 - 2028*
- GPA: 3.85 / 4.0
- Advisors: Prof. Zhou Yu, Prof. Julia Hirschberg
- **Research Areas: Dialogue Systems in Education, Speech, Natural Language Processing**

Stanford University *Stanford, CA*
Master's in Computer Science *2021 - 2023*
- GPA: 4.013 / 4.0
- Advisors: Prof. Chris Manning, Prof. Chris Potts
- **Research Areas: Natural Language Processing, Speech, Dialogue Systems, Linguistics**

Georgia Institute of Technology *Atlanta, GA*
BS in Computer Science *2017 - 2020*
- GPA: 3.94 / 4.0
- Threads: People and Intelligence, Dean's List 2017-2020
- **Research Areas: Natural Language Processing, Story Generation, Natural Language Generation, Alignment, Computer Vision, Robotics**

Professional Experience

Jun. 2023 - Aug. 2023	**Research Engineering Intern**, RAIA HEALTH (Early stage startup)
Jun. 2022 - Sept. 2022	**Research Intern**, Affective Computing Group, UNIVERSITY OF SOUTHERN CALIFORNIA
Jan. 2021 - Aug. 2021	**Remote Research Assistant**, Robotics, Evolution, and Art Lab, IT UNIVERSITY OF COPENHAGEN
May 2020 - Aug. 2020	**Software Engineering Intern**, AMAZON ROBOTICS
May 2019 - Aug. 2019	**Research Intern**, Intelligent Control Lab, CARNEGIE MELLON UNIVERSITY

Publications

[1] **Li Siyan**, Teresa Shao, Zhou Yu, and Julia Hirschberg. EDEN: Empathetic Dialogues for English learning. In *arXiv preprint arXiv:2406.17982*, 2024. URL: `https://arxiv.org/abs/2406.17982`.

[2] **Li Siyan**, Teresa Shao, Zhou Yu, and Julia Hirschberg. Using Adaptive Empathetic Responses for Teaching English. In *Proceedings of the 19th Workshop on Innovative Use of NLP for Building Educational Applications*, Mexico City, June 2024. Arxiv. URL: `https://arxiv.org/pdf/2404.13764`.

[3] **Siyan Li**. Color me intrigued: quantifying usage of colors in fiction. In *Creative AI Across Modalities, AAAI 2023*, Washington, DC, February 2023. Arxiv. URL: `https://arxiv.org/pdf/2301.03559`.

[4] **Siyan Li**, Riley Carlson, and Christopher Potts. Systematicity in GPT-3's Interpretation of Novel English Noun Compounds. In *Findings of EMNLP 2022*, 2022. URL: `https://arxiv.org/abs/2210.09492`.

[5] Eric Mitchell, Joseph J. Noh, **Siyan Li**, William S. Armstrong, Ananth Agarwal, Patrick Liu, Chelsea Finn, and Christopher D. Manning. Enhancing Self-Consistency and Performance of Pretrained Language Models with NLI. In *Proceedings of the 2022 Conference on Empirical Methods in Natural Language Processing (EMNLP)*. Association for Computational Linguistics, 2022. URL: https://ericmitchell.ai/concord.pdf.

[6] Xiangyu Peng, **Siyan Li**, Sarah Wiegreffe, and Mark Riedl. Inferring the Reader: Guiding Automated Story Generation with Commonsense Reasoning. In *Findings of EMNLP 2022*, 2022. URL: https://arxiv.org/abs/2105.01311.

[7] **Siyan Li**, Ashwin Paranjape, and Christopher Manning. When can I Speak? Predicting initiation points for spoken dialogue agents. In *Proceedings of the 23rd Annual Meeting of the Special Interest Group on Discourse and Dialogue*, pages 217–224, Edinburgh, UK, September 2022. Association for Computational Linguistics. URL: https://aclanthology.org/2022.sigdial-1.22.

[8] Amal Alabdulkarim, **Siyan Li**, and Xiangyu Peng. Automatic story generation: Challenges and attempts. In *Proceedings of the Third Workshop on Narrative Understanding*, pages 72–83, Virtual, June 2021. Association for Computational Linguistics. URL: https://aclanthology.org/2021.nuse-1.8, doi:10.18653/v1/2021.nuse-1.8.

[9] Xiangyu Peng, **Siyan Li**, Sarah Wiegreffe, and Mark Riedl. Inferring the reader: Guiding automated story generation with commonsense reasoning. In *Proceedings of the Third Workshop on Narrative Understanding*, Virtual, June 2021. Arxiv. URL: https://arxiv.org/pdf/2105.01311.pdf.

[10] Shyam Sudhakaran, Djordje Grbic, **Siyan Li**, Adam Katona, Elias Najarro, Claire Glanois, and Sebastian Risi. Growing 3D Artefacts and Functional Machines with Neural Cellular Automata. In *Proceedins of the Artificial Life Conference 2021*, volume abs/2103.08737, 2021. URL: https://arxiv.org/abs/2103.08737, arXiv:2103.08737.

[11] Xiangyu Peng, **Siyan Li**, Spencer Frazier, and Mark Riedl. Reducing non-normative text generation from language models. In *Proceedings of the 13th International Conference on Natural Language Generation*, pages 374–383, Dublin, Ireland, December 2020. Association for Computational Linguistics. URL: https://aclanthology.org/2020.inlg-1.43.

[12] Abulikemu Abuduweili, **Siyan Li**, and Changliu Liu. Adaptable Human Intention and Trajectory Prediction for Human-Robot Collaboration. In *Proceedings of AI-HRI 2019*, volume abs/1909.05089, 2019. URL: https://arxiv.org/pdf/1909.05089.pdf.

Awards, Fellowships, & Grants

2023	**Mudd Fellow**, School of Engineering and Applied Sciences, Columbia University
2023	**1st Place, Scientific Innovation Prize**, Amazon Alexa Prize Social Bot Challenge

Teaching Experience

Mar. 2023 - Jun. 2023	**CS 224U Natural Language Understanding**, Teaching Assistant
Jan. 2023 - Mar. 2023	**CS 224N Natural Language Processing with Deep Learning**, Teaching Assistant
Sept. 2021 - Dec. 2021	**CS 103 Mathematical Foundations of Computing**, Teaching Assistant
Jan. 2017 - Aug. 2020	**CS 3600 Introduction to AI**, Teaching Assistant, Head Teaching Assistant

Mentoring

2024   **Riya Raj**, MS Student, Columbia University
2024   **Zackary Rackauckas**, MS Student, Columbia University
2024   **Vethavikashini Chithrra Raghuram**, MS Student, Columbia University
2024   **Brittney Lilly**, BS Student, Columbia University
2024   **Teresa Shao**, BS Student, Columbia University
2022   **Riley D. Carlson**, BS Student, Stanford University

Research Experience

Columbia NLP, Columbia University   *New York, NY*
ADVISORS: PROF. ZHOU YU, PROF. JULIA HIRSCHBERG   *Aug. 2023 - Present*
- Building empathetic spoken chatbot systems for teaching English
- Improving English-teaching chatbot's user retention capability

Stanford NLP Group, Stanford University   *Stanford, CA*
ADVISORS: PROF. CHRIS MANNING, PROF. CHRIS POTTS   *Aug. 2021 - Jun. 2023*
- Training deep neural networks to predict dialogue agent utterance initiation points in a continuous manner
- Participating in the Amazon Alexa Prize competition
- Probing linguistic knowledge of GPT-3 in the field of noun compounds

Affective Computing Group, University of Southern California   *Los Angeles, CA*
ADVISOR: PROF. JONATHAN GRATCH   *Jun. 2022 - Sept. 2022*
- Examining conversational behaviors in human face-to-face multi-issue negotiations
- Conducting statistical analyses between facial expressions during negotiations and various subjective and objective metrics
- Using visual, audio, and lexical features to predict appropriate backchannel opportunities

Robotics, Evolution, and Art Lab, IT University of Copenhagen   *Remote*
ADVISOR: PROF. SEBASTIAN RISI   *Jan. 2021 - Aug. 2021*
- Designing web interfaces for interactive evolution of Minecraft structures through Neural Cellular Automata

Entertainment Intelligence Lab, Georgia Tech   *Atlanta, GA*
ADVISOR: PROF. MARK RIEDL   *Aug. 2019 - Dec. 2020*
- Utilizing tools such as COMET and VerbNet to enhance the quality of automatic story generation
- Training language models to produce less toxic content
- Gaining experience in conducting online human subject studies

Intelligent Control Lab, Carnegie Mellon University   *Pittsburgh, PA*
ADVISOR: PROF. CHANGLIU LIU   *May. 2019 - Aug. 2019*
- Collecting human demonstration data for a human-robot collaborative task
- Using demonstrations to allow robot assistance through predicting human trajectory

Skills

Technical
- Natural Language Processing, Speech Processing, Machine Learning, Agile Methodologies

Programming Languages
- Python, R, Java, C/C++

Frameworks and Tools
- Pytorch, scikit-learn, Tensorflow, nltk, Flask, ROS

Languages
- English, Mandarin, Japanese, Spanish, French

Professional Activities

Organizer

2023 - present	**Columbia NLP Seminar Organizer**, Fall 2023 - present
2022 - 2023	**Stanford NLP Seminar Organizer**, Fall 2022 - Spring 2023
2021 - 2022	**Stanford NLP Lunch Organizer**, Fall 2021 - Spring 2022

Service and Outreach

Feb. 2024	**Reviewer**, ACL 2024
Dec. 2022 - Apr. 2023	**Reviewer, Program Committee**, ACL 2023 • Reviewer for the Dialogue and Interactive Systems Track.
Dec. 2022	**Reviewer**, AAAI 2023 • Reviewer for the Creative AI Across Modalities Workshop.
Jun. 2022 - Oct. 2022	**Reviewer**, EMNLP 2022 • Reviewer for the Ethics track and the Dialogue and Interactive Systems track.
Dec. 2020 - Present	**Volunteer**, Women in ML (WiML) • Social media outreach and website design.

Media Coverage

Is It My Turn Yet? Teaching a Voice Assistant When to Speak. Stanford HAI.