Yuchen Li

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Objective

Currently a full-time PhD candidate in **Procedural Game Content Generation** at New York University, where I can leverage my innovative research approach, proactive problem-solving skills, and passion for advancing the field. Committed to contributing to cutting-edge knowledge and fostering my career growth.

Education

New York University September 2024 - Present
PhD: Computer Science

New York University July 2021 - September 2022
Master of Arts: Interactive Media Arts

New York University January 2019 - May 2021
Bachelor of Science: Integrated Digital Media | Minor: Mathematics

Clarkson University August 2016 - December 2018
Coursework in: Environmental Engineering

Academic Service

Reinforcement Learning and Video Games Workshop (RLC 2026) 2026

Invited Organizer

- Invited to join the organizing team; responsibilities include speaker outreach, workshop planning, and coordinating the review process.

8th International Summer School on AI and Games 2026

Volunteer

- Volunteering at the leading annual event on AI and games, held at Leiden University, the Netherlands (June 15–19, 2026).

Research and Teaching Experience

New York University Jan. 2025 – Present

Software Engineering Teaching Assistant *Python, Git, Backend, Testing*

- Guided student teams through full-stack development projects, offering support on backend architecture, API design, and debugging.
- Held weekly office hours and recitations to clarify course concepts and provide hands-on coding guidance.
- Provided detailed feedback on project milestones, ensuring adherence to engineering best practices and scalable code structure.

Southern University of Science and Technology Spring 2023 - Jun. 2024

Research Assistant *Python, Flask, Git, GitHub*

- Actively contributed to the field of procedural content generation to generate fun and diverse game content.
- Designed and maintained a website to record gameplay.

New York University Shanghai Spring 2022 - Fall 2022

E-textile Research Assistant *JavaScript*

- Assisted in practical hands-on sessions, ensuring students mastered techniques in both sewing and research methodologies.
- Developed sample codes to facilitate students' comprehension of fundamental programming principles, aiding in their grasp of basic programming logic.

Clarkson University Spring 2018 - Fall 2018

Elementary Differential Equation Teaching Assistant

- Facilitated recitation classes for groups of 10-20 students, providing comprehensive instruction and clarifications on complex concepts in differential equations.
- Broke down complex concepts step-by-step into more digestible and relatable components, relating these concepts to real-life experiences.

Projects

Game AI Book Website Jan. 2026 – Jun. 2026

Website Update & Content Integration *Web Dev, Documentation, Git*

- Updating the official website for the new edition of *Artificial Intelligence and Games* under guidance from Professors Julian Togelius and Georgios N. Yannakakis.
- Adding exercises from the second edition and preparing optional Google Colab versions.
- Integrating an LLM bot interface to enable interactive Q&A over book content.
- Fixing and updating the table of contents and adding new sections such as the Summer School page.
- Adding author photos, bios, and quotes collected for the back cover of the book.
- Managing site structure, removing outdated free-version links, and improving navigation flow.

Diversity Metrics Literature Review in Gaming Scenarios Jun. 2023 - Apr. 2024

Reviewing Existing Metrics *PCG, Research, Diversity, Literature Review*

- Conducted a comprehensive survey analyzing diversity metrics within gaming scenarios to understand their impact on player experiences and game development.
- Explored and analyzed the significance of diversity across narratives, characters, and gameplay experiences, identifying its implications within the gaming industry.
- Developed refined methodologies for data collection and analysis specifically focused on diversity metrics within gaming.
- Collaborated with experts, researchers, and gaming professionals to ensure the project's relevance and accuracy in the gaming landscape.
- Generated a detailed report summarizing findings and offering recommendations for game designers, AI developers, and researchers.
- Addressed gaps in existing literature related to diversity metrics in gaming scenarios, contributing to the understanding of its pivotal role in shaping gaming experiences.

Immersive Article Project Dec. 2022 - Mar. 2023

Design Interactive Website to Visualize MOEA *Data Visualization, Explanation Design, Interactive Graphs*

- Designed an immersive article utilizing scatter plots to visually explain the functionality of the multi-objective evolutionary algorithm (MOEA).
- Created an interactive graph to dynamically illustrate the procedural aspects of MOEA for enhanced comprehension.
- Integrated real-world scheduling questions to contextualize the functionality of MOEA, fostering a practical understanding of its application.
- Employed data visualization techniques to provide an accessible and engaging explanation of MOEA's functionality.

Children's AI Programming Project Oct. 2020 - Dec. 2020

Showcasing an AI Application in Snap! *Snap!, Education, AI*

- Mastered the Snap! programming system, incorporating Dr. Ken Kahn's AI library to train AI models.
- Developed a Snap! application in the Chinese context, leveraging finger gestures to symbolize numbers and initiate various style transfers of camera images within the programming environment.
- Proposed this project as an additional example of AI programming tailored for children in Snap!.

Swatchbook Aug. 2020 - Dec. 2020

Design Swatchbook for Programming Beginners *Embroidery Machine, Education, TurtleStitch*

- Utilized an electronic embroidery machine to materialize tangible programming logic for children and beginners, employing TurtleStitch.
- Designed turtle-inspired patterns to represent various programming logics using different stitching techniques.
- Expanded the concept to reflect the endless potential of programming, drawing inspiration from the ”Luò Shū.”
- Guided beginners in programming through the logic interpretation and hands-on setup of the embroidery process, emphasizing computational thinking and practical learning.

Skills

Coding:

Python, JavaScript, P5.js, Processing, HTML, CSS, MATLAB, Geographical Information System

Other:

Microsoft Suite, Adobe Suite, Figma, Unity, GameMaker Studio 2, Maya, Z-Brush.

Publications

1. **Y. Li**, C. Lin, M. U. Nasir, P. Bontrager, J. Liu, and J. Togelius, “GVGAI-LLM: Evaluating Large Language Model Agents with Infinite Games,” under review at *AAAI 2026*.
2. S. Earle, G. Todd, Z. Jiang, M. U. Nasir, A. Banburski-Fahey, **Y. Li**, J. Togelius, and A. Khalifa, “PuzzleJAX: A Benchmark for Learning and Reasoning,” in *IEEE Conference on Games (CoG) 2026*.
3. S. Arimura, **Y. Li**, and J. Togelius, “Stack more levels: how to get general and human-like Mario playing,” in *IEEE Conference on Games (CoG) 2026*.
4. L. Liu, R. Zou, S. Kuang, **Y. Li**, T. Merino, and J. Togelius, “LURK Werewolf: Evaluating Linguistic Bias in Large Language Models,” in *IEEE Conference on Games (CoG) 2026*.
5. M. U. Nasir, **Y. Li**, S. James, and J. Togelius, “Mortar: Evolving Mechanics for Automatic Game Design,” in *Proceedings of the Genetic and Evolutionary Computation Conference (GECCO)*, 2026.
6. Q. Zhang, **Y. Li**, B. Yuan, J. Togelius, G. N. Yannakakis, and J. Liu, “Ethical Considerations of Large Language Models in Game Playing,” *Frontiers of Computer Science*, vol. 21, no. 1, 2027 (published online 2025).
7. **Y. Li***, Z. Wang*, Q. Zhang, B. Yuan, and J. Liu, “Measuring Diversity of Game Scenarios,” *IEEE Transactions on Games*, vol. 17, no. 3, pp. 558–581, 2025.
8. Z. Wang*, **Y. Li***, H. Du, J. Liu, and G. N. Yannakakis, “*Fun* as moderate divergence: Evaluating experience-driven PCG via RL,” *IEEE Transactions on Games*, vol. 17, no. 2, pp. 360–373, 2025.
9. Q. Zhang*, **Y. Li***, Y. Lin, H. Wang, and J. Liu, “Interpreting Multi-objective Evolutionary Algorithm via *Sokoban* Level Generation,” in *IEEE Conference on Games (CoG) 2024*.
10. M. Minsky* and **Y. Li***, “Exploring a Computer Embroidery Swatchbook in a University Classroom,” in *Constructionism/Fablearn Conference*, New York, October 2023.

*indicates equal contribution