

# Jiuqi Wang

Email: [jiuqi@email.virginia.edu](mailto:jiuqi@email.virginia.edu) Mobile: +1-434-760-7876 GitHub: [LeonardoWjq](https://github.com/LeonardoWjq)

LinkedIn: [jiuqi-wang-671111196](https://www.linkedin.com/in/jiuqi-wang-671111196) Website: [leonardowjq.github.io](https://leonardowjq.github.io)

## EDUCATION

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### University of Virginia

*Ph.D. Computer Science*

Advisor: Shangtong Zhang

*Aug. 2023 - May. 2028*

Charlottesville, Virginia

### University of Alberta

*MSc. Computing Science (Thesis)*

Co-Supervisors: Martin Müller and Jonathan Schaeffer

*Sep. 2021 - Jun. 2023*

Edmonton, Alberta

### McGill University

*BSc. Honours Computer Science*

Distinction, First-Class Honours

*Sep. 2017 - Jun. 2021*

Montréal, Québec

## RESEARCH INTERESTS

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Sequential Decision Making under Uncertainty, Reinforcement Learning (RL), Deep Learning

## RESEARCH EXPERIENCE

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### Graduate Research Assistant

*Advised by Prof. Shangtong Zhang*

*Aug. 2023 - present*

Charlottesville, Virginia

- Focus on the theory and application of reinforcement learning for solving sequential decision-making problems.
- Recent projects include almost sure convergence of temporal difference learning algorithms and in-context reinforcement learning. Please see [Publications](#) for more detail.

### Master's Thesis

*Co-Supervised by Prof. Martin Müller and Jonathan Schaeffer*

*May 2022 - June 2023*

Edmonton, Alberta

- **Title:** [Deep Dive on Checkers Endgame Data](#)
- Developed the raw-data-to-tensor pipeline that reads in byte representations of board positions and turns them into tensors.
- Designed and implemented the deep neural networks in JAX.
- Constructed a flexible and scalable experiment workflow.

### Undergraduate Research

*Supervised by Prof. Hsiu-chin Lin*

*May 2020 - Sep. 2020*

Montréal, Québec

- **Topic:** *Sim-to-Real Transfer Learning of Time-Invariant Linear Parameter-Varying Dynamical Systems from Gaussian Mixture Models*
- Reviewed relevant literature on dynamical systems and transfer learning.
- Implemented the learning algorithm in NumPy.
- Conducted experiments on benchmark datasets.
- Developed and studied an adaptive re-training procedure that increases the algorithm's robustness under noisy training data.

## TEACHING EXPERIENCE

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### Teaching Assistant

*Reinforcement Learning*

*Sep. 2024 - Dec. 2024*

Charlottesville, Virginia

- Hosted office hours to provide academic support and facilitate student learning.
- Announced and graded homeworks.

### Teaching Assistant

*Search, Knowledge and Simulations*

*Jan. 2022 - Apr. 2022*

Edmonton, Alberta

- Prepared the starter code of the assignments for the students and the scripts for grading the assignments.
- Monitored and graded the final project, where each student group developed a game-playing agent and competed with each other in a tournament.

### Teaching Assistant

*Intro to the Foundations of Computation I*

*Sep. 2021 - Dec. 2021*

Edmonton, Alberta

- Held labs with other TAs to review and complement the materials covered in lectures.
- Graded student assignments.

### Teaching Assistant

*Intro to Computer Science*

*Jan. 2020 - May 2020*

Montréal, Québec

- Prepared original weekly quiz questions for the course.
- Held office hours to answer questions from students.

## PROFESSIONAL EXPERIENCE

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### AI-SCORE 2024

*University of Maryland*

*May 2024 - Jun. 2024*

College Park, Maryland

- One of the 30 selected Ph.D. students to participate in the inaugural [AI-SCORE](#) summer school where students and scholars from the artificial intelligence and operations research communities join to discuss interdisciplinary research.
- Attended lectures and panel discussions and exchanged ideas with fellow students from both disciplines.
- Travel and lodging costs were fully reimbursed.

### Development Intern

*PTC Inc.*

*May 2021 - Jul. 2021*

Suzhou, China

- Worked on product internationalization using the i18next framework that translates the originally hard-coded English webpages to the selected language.
- Troubleshooted several front-end issues.

## PUBLICATIONS

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\* indicates equal contribution; † indicates advisor

1. [Almost Sure Convergence of Linear Temporal Difference Learning with Arbitrary Features](#)  
**Jiuqi Wang**, Shangtong Zhang<sup>†</sup>  
arXiv preprint arXiv:2409.12135, 2024.
2. [Transformers Learn Temporal Difference Methods for In-Context Reinforcement Learning](#)  
**Jiuqi Wang**<sup>\*</sup>, Ethan Blaser<sup>\*</sup>, Hadi Daneshmand, Shangtong Zhang<sup>†</sup>  
arXiv preprint arXiv:2405.13861, 2024  
**Contributed talk** at the Reinforcement Learning Conference (RLC) Workshop on Training Agents with Foundation Models, 2024  
**Spotlight Award** at the International Conference on Machine Learning (ICML) Workshop on In-Context Learning, 2024
3. [Deep Dive on Checkers Endgame Data](#)  
**Jiuqi Wang**, Martin Müller<sup>†</sup>, Jonathan Schaeffer<sup>†</sup>  
IEEE Conference on Games (CoG), 2023

## PEER REVIEW

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- Asian Conference on Machine Learning (ACML) 2024
- Reinforcement Learning Conference (RLC) 2024
- International Conference on Artificial Intelligence and Statistics (AISTATS) 2024
- International Conference on Learning Representations (ICLR) 2024

## HONORS AND AWARDS

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<b>IEEE CIS Travel Grant</b> \$500	<i>Jul. 2023</i> IEEE CIS
<b>GSA Academic Travel Grant</b> \$500	<i>Jul. 2023</i> University of Alberta
<b>Science Undergraduate Research Award (SURA)</b> \$7,000	<i>May 2020</i> McGill University
<b>Dean's Honour List</b>	<i>Aug. 2018</i> McGill University
<b>Faculty of Science Scholarship</b> \$500	<i>Jul. 2018</i> McGill University
<b>Complementary Award</b> \$3,000	<i>Sep. 2017</i> McGill University
<b>Hugh Brock Scholarship</b> \$3,000	<i>Jul. 2017</i> McGill University

## SKILLS

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- **Technology:** Python(NumPy, Matplotlib, Jupyter Notebook, PyTorch, JAX) (advanced), Java (intermediate), Git (intermediate), Linux (intermediate), L<sup>A</sup>T<sub>E</sub>X(advanced)
- **Knowledge:** Statistical Machine Learning (advanced), Deep Learning (advanced), (Deep) Reinforcement Learning (advanced), Heuristic Search (advanced), Robotics (intermediate)
- **Language:** English(proficient), Mandarin(native), French(elementary)