

# Changdao He

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CSC495 Professors  
Department of Computer Science  
University of Toronto  
Toronto, ON

Dear Professors,

I am excited to apply for a Summer 2025 research opportunity in AI Fairness and Ethics, Autogradable Python Memory Model Questions, Multi-Agent Reinforcement Learning, and Learning Formal Grammars for Reward Specification. As a student double majoring in Computer Science and Mathematics, I am eager to contribute to research that integrates theoretical foundations with practical AI applications.

My academic background and research experiences have equipped me with strong problem-solving abilities and technical expertise. My ongoing research project in heuristics for Othello, supervised by Professor Alice Gao, has strengthened my skills in algorithm design, game AI, and strategic AI design—making me particularly interested in the Multi-Agent Reinforcement Learning and Formal Grammars for Reward Specification projects. Additionally, my experience processing and visualizing EEG data as a Data Processing Intern at Shenzhen University has given me exposure to computational modeling and data analysis—aligning well with AI fairness research.

Beyond research, my software development experience includes working as a Software Development Intern at BGI Genomics, where I contributed to CRM system enhancements and automation strategies. Additionally, I led the development of business logic for a Java-based weather application, emphasizing clean architecture and SOLID principles. These experiences make me a strong candidate for the Autogradable Python Memory Model Questions project, where system design and educational software development play a key role.

With familiarity in Python, PyTorch, algorithm design, and software development, I am confident in my ability to contribute meaningfully to any of these research projects. I am eager to collaborate with faculty and peers in a research-intensive environment and further develop my skills in AI and machine learning.

Sincerely,

**Changdao He**