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To whomever this may concern,

I am writing to express my interest in the CSC494 research opportunity. As a third-year Computer Science Specialist at the University of Toronto focusing on Artificial Intelligence, I am eager to contribute to faculty research that aligns with my academic goals.

My passion for computer science stems from fascination with how complex programs emerge from fundamental instructions. This interest deepened significantly after taking CSC311 (Introduction to Machine Learning), where I discovered the elegance of mathematical models that capture probabilistic distributions in nature. This experience has motivated my goal to pursue advanced studies in machine learning, with CSC494 representing an important step toward formal research experience.

I believe I am well-suited for this opportunity for three main reasons:

First, I have established a strong foundation in machine learning through my coursework. Beyond CSC311, I am currently enrolled in CSC413 (Neural Networks and Deep Learning), where I am studying various neural network architectures, addressing training and testing challenges, and exploring optimization techniques. These courses have provided me with the theoretical knowledge necessary to engage meaningfully with research in this domain.

Second, I have applied these concepts in practical projects that demonstrate my technical capabilities. In a recent collaborative project, I worked with three colleagues to develop predictive models for student performance on diagnostic questions. We implemented and compared three distinct approaches—K-Nearest Neighbors, Item-Response Theory, and Autoencoder Neural Networks—analyzing the relative strengths and limitations of each methodology. This experience enhanced my understanding of machine learning implementation and evaluation in real-world applications.

Third, although my formal research experience at the university level is limited, my participation in the International Baccalaureate program during high school provided me with foundational research skills. The program's emphasis on formal academic writing and independent investigation equipped me with the methodological framework to approach research systematically—skills I am eager to develop further under faculty mentorship.

I appreciate the self-directed nature of CSC494 and am committed to documenting my learning journey throughout the term, including thoughtful reflection on both successes and challenges encountered.

Thank you for considering my application. I welcome the opportunity to discuss how I might contribute to your research through this course.

Sincerely,
Nicholas Saroiu