

STATEMENT OF RESEARCH

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Dear Romit,

I am a second year undergraduate at the Indian Institute of Technology Bombay, pursuing Bachelors in Technology with a major in Computer Science and Engineering along with a minor in Machine Intelligence and Data Science. A considerable experience in Machine Learning, Artificial Intelligence, and the resultant enhanced passion and ability for research are what encourage me to write this letter.

Through my academic background and research experience, I have cultivated a strong interest in Machine Learning, Artificial Intelligence and Data Science. I am particularly fascinated by the application of these technologies in addressing societal challenges and improving the efficiency of existing systems. I saw your LinkedIn post and believe my experience in differential equations alongwith strong programming skills in Python and Pytorch makes me well-equipped to contribute meaningfully to the project.

I was introduced to Machine Learning through an online course by MIT Open Learning. During the past summer, I undertook a project entitled "Economics Meets Machine Learning", where I implemented various economic problems as Markov Decision Processes and employed a combination of Bandit and Reinforcement Learning Algorithms to address complex matching markets and auction dynamics.

Additionally, I completed a two-month long reading project on Reinforcement Learning (main reference: Sutton and Barto). It was quite intriguing to learn about some of the efficient techniques including Dynamic Programming, TD learning and Monte Carlo methods. My coursework in Optimization further strengthened my theoretical foundation for Machine Learning. Next semester, I am planning to take AI-ML and Medical Image Computing courses.

I am enthusiastic about the opportunity to contribute to and learn from the vibrant research community at your institution. I am confident that my academic background, research experience, and dedication to innovation align with the goals of your program.

Thank you for considering my application.

Regards,
Saksham Rathi