

# Ishan Patel



**Graduate Institution:** MIT

**Location:** Cambridge, MA

**Graduate Discipline:** Chemistry

**Hometown:** Westborough, MA

## **Research Interests:**

*I'm currently interested in using computational chemistry and biology techniques to increase the efficiency of biological catalysts. I'm specifically working on using molecular and quantum mechanics to understand the reaction mechanism of the phosphotriesterase (PTE) enzyme. This knowledge will then be utilized to mutate specific residues in PTE to enhance catalytic efficiency. Future interests are towards using the same techniques to produce biohydrogen through concomitant substrate and protein design of, respectively, NADPH and Bidirectional hydrogenase. I'm also interested in developing and using alternative computing frameworks, such as Graphical Processing Units (aka Video card) and Physics Processing Units (aka PhysX) to drastically speed up scientific computations. My past research interests have been in cerebral dynamics of the feline visual cortex, Surface Enhanced Raman Spectroscopy of bacteria, pattern recognition, synthetic organic chemistry, and antibiotic drug design.*

## **About me:**

*I am wholly unsure of my career goals. I would like to do Science, but I also want to work in Science and Technology Policy. I also would like to work in industry by developing and commercializing technologies specifically related to national defense, energy and renewable materials. Currently living in the heart of Boston, MA, I also like to take advantage of the various opportunities the city has to offer. I run an elderly companionship program. I also can be found volunteering at a local hospital teaching computer skills to neurology patients such that they can use technology for assistance. Additionally, I tutor inner-city students in Math and Science. My proudest achievement in the past was running the DOE's Regional Science Bowl at Boston University, my alma mater. In my free time, I'm found playing basketball or football, bicycling, hiking, watching my beloved Boston/New England sports teams, making random electronic devices which serve no useful purposes, or learning carpentry.*



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