Howard Beck

hbeck@mit.edu https://www.mit.edu/~hbeck Cambridge, MA

Education

Massachusetts Institute of Technology, Cambridge, MA
B.S. in Pure Mathematics, expected May 2025
Humanities Concentration in Philosophy
GPA: 4.8/5.0

BASIS Tucson North, Tucson, AZ
High school diploma with High Honors
GPA: 3.99/4.0 (unweighted), 4.76/4.0 (weighted)

Research Interests

Chromatic homotopy theory
Equivariant homotopy theory
Algebraic K-theory

Talks

MIT Directed Reading Program Symposium January 31st, 2025
MIT/Harvard Babytop Seminar December 3rd, 2024
MIT Directed Reading Program Symposium February 3rd, 2023

Preprints

(In prep) *Chromatic blueshift conjecture: the simple case and an algebraic analogue* with Kyle Roke
(In review – expository work) **Howard Beck**. "An Elementary Introduction to Stable Homotopy Theory". Nov. 2024. URL: https://www.mit.edu/~hbeck/papers/elem_stable.pdf
Howard Beck, Roberto Furfaro, and Brian Gaudet. "Deep Learning Imitation of Particle Filter for Autonomous Vertical Optical Lunar Lander". Aug. 2021. URL: https://www.mit.edu/~hbeck/papers/lunar_learning.pdf

Research Experience

Undergraduate Researcher, Department of Mathematics, MIT Summer 2024
Undergraduate Researcher, Department of Mathematics, MIT Summer 2023, Fall 2023
Undergraduate Researcher, Computer Science and Artificial Intelligence Lab, MIT Summer 2022
Undergraduate Researcher, Department of Aeronautics and Astronautics, MIT Spring 2022
Undergraduate Researcher, Department of Aeronautics and Astronautics, MIT Fall 2021
Intern, Department of Systems and Industrial Engineering, University of Arizona Spring 2021

Teaching Experience

Undergraduate Assistant, Department of Mathematics, MIT Spring 2024
Mentor, Undergraduate Mathematics Association, MIT Spring 2023
Teacher, Educational Studies Program, MIT Spring 2022

Service

Co-organizer, with Professor Haynes Miller Fall 2024
Volunteer Fall 2024

Leadership

MIT fire spinning and flow arts club Summer 2022-present
Student body government overseeing clubs at MIT Summer 2024-present

Languages

Human: English (native), Spanish (also native), French
Computer: LaTeX, Python, MATLAB, Java, JavaScript, Lua, HTML

Skills and Hobbies

Rock climbing, running, fire spinning, figure skating, weight lifting