Subhash Kantamneni

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Website: subhashk.com **Google Scholar:** [link] **GitHub:** github.com/subhashk01

EDUCATION

University of California, Berkeley
Prospective Ph.D. student in Computer Science Berkeley, CA

Massachusetts Institute of Technology **August 2024 - June 2025**
Masters of Engineering Cambridge, MA
Advisor: Prof. Max Tegmark

Massachusetts Institute of Technology **August 2020 - June 2024**
Bachelor of Science in Computer Science Cambridge, MA
Bachelor of Science in Physics
Graduated with a 5.0/5.0 GPA

SELECTED PAPERS

Language Models Use Trigonometry to Do Addition
Subhash Kantamneni and Max Tegmark
Submitted to International Conference of Machine Learning (ICML) Main Conference 2025.

Are Sparse Autoencoders Useful? A Case Study in Sparse Probing
Subhash Kantamneni*, Joshua Engels*, Senthooran Rajamanoharan, Max Tegmark, and Neel Nanda
Submitted to International Conference of Machine Learning (ICML) Main Conference 2025.

How Do Transformers Model Physics? Investigating the Simple Harmonic Oscillator
Subhash Kantamneni, Ziming Liu, and Max Tegmark
Entropy and ICML 2024 Mechanistic Interpretability Workshop.

OptPDE: Discovering Novel Integrable Systems via AI-Human Collaboration
Subhash Kantamneni, Ziming Liu, and Max Tegmark
Physical Review E.

Enhancing Predictive Capabilities in Fusion Burning Plasmas Through Surrogate-Based Optimization in Core Transport Solvers
P. Rodriguez-Fernandez, N.T. Howard, A. Saltzman, **Subhash Kantamneni**, J. Candy, C. Holland, M. Balandat, S. Ament, A.E. White
Nuclear Fusion.

NuCLR: Nuclear Co-Learned Representations
Ouail Kitouni, Niklas Nolte, Sokratis Trifinopoulos, **Subhash Kantamneni**, and Mike Williams
ICML 2023 SynS and ML Workshop

SELECTED HONORS

MIT Physics Honor Society (Top ∼10% of Physics Majors) **2024**

Fulbright Scholarship Winner (Declined) **2024**

Neel Nanda's MATS Stream (3% Acceptance Rate) **2024**

Research Science Institute (RSI) Scholar **2019**

WORK EXPERIENCE

Bridgewater Associates (Largest Hedge Fund in the World) **Jun – Aug 2023**
Investment Associate Intern (Portfolio Construction) *Westport, CT*

Systematized a geopolitical risk gauge that predicts equity market drops 20% more accurately than existing metrics. Gained deep insights into macroeconomics and dialogued one-on-one with Bridgewater's CEO on recruitment.

Mobilus Labs **Jun – Aug 2022**
Software Engineering Intern *London, UK*

Developed speech transcription for Mobilus's bone-conduction communication headset, a TIME 2021 Top 100 Invention. Created an AI agent that warns users when they enter dangerous construction zones and automates machine checklists.

NASA Jet Propulsion Laboratory **Jun – Aug 2021**
Exoplanet Discovery Group Intern *Pasadena, CA*

Automated verification and validation for the EXCALIBUR exoplanet atmospheric analysis pipeline using ML. Explored classical machine learning and advanced data simulation techniques while writing production-level code.

TEACHING AND MENTORING EXPERIENCE

Presidential Advisory Cabinet **Aug 2023 – May 2024**
Undergraduate Advisor *Cambridge, MA*

Selected as one of four undergraduate advisors to MIT President Sally Kornbluth from a pool of over 50 candidates.
Advised during a tumultuous period in MIT history on issues like food insecurity, academic regulation, and managing a charged campus atmosphere in response to conflict in the Middle East.

Global Teaching Labs (South Korea, South Africa, Botswana, Bahrain) **Jan 2022/23/24**
Teacher *Seoul, Johannesburg, Gaborone, Manama*

Taught global STEM workshops to teenagers from varied socioeconomic classes over significant language barriers.
Codeveloped Arduino projects to introduce programming and engineering projects to illustrate physics concepts.

Leadership Training Institute **Sep 2020 – Present**
Leadership Mentor *Cambridge, MA*

Mentored a group of 15 Boston public school students for 3 months in leadership and public speaking.
Designed weekly leadership exercises that kept students engaged while improving their communicative abilities.