Subhash C. Kantamneni

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Education

Massachusetts Institute of Technology (MIT) 2020 – 2025
EECS Masters of Engineering student, Supervised by Prof. Max Tegmark Cambridge, MA

- **MIT Undergrad:** Graduated with a **5.0/5.0 GPA** and a double major in Physics and Computer Science
- **Courses:** 6.867 Graduate Machine Learning, 6.S986 LLMs and Beyond (A), 8.13 Experimental Physics (A+)

Research

Tegmark AI Safety Group Aug 2023 –
AI Researcher; Working with Prof. Max Tegmark, Ziming Liu Cambridge, MA

- Masters - Interpreting how LLMs do multistep reasoning tasks like arithmetic by analyzing the storage of subproblems
- Senior Spring - Reverse engineered how transformers model physical systems like the harmonic oscillator, discovering that they implement "human" methods like the matrix exponential. Accepted to *Entropy* and the ICML Mechanistic Intepretability workshop (first author)
- Senior Fall - Created OptPDE, a first of its kind AI method that discovers new integrable partial differential equations (PDEs) by optimizing PDE coefficients to maximize conserved quantities (AI4Science). Submitted to *Physical Review E* (first author)

MIT Institute for Artificial Intelligence and Fundamental Interactions (IAIFI) Aug 2022 – May 2023
AI for Physics Researcher; Worked with Prof. Mike Williams, Ouail Kitouni, Niklas Nolte Cambridge, MA

- Created SOTA machine learning models to predict atomic properties from embedded proton/neutron numbers
- Served as the sole undergraduate on the project; published results at ICML's scientific machine learning workshop

MIT Plasma Science Fusion Center Jan – May 2022
Nuclear Fusion Researcher; Worked with Pablo Rodriguez-Fernandez, Nathan Howard Cambridge, MA

- Analyzed 10+ years of Alcator C-Mod reactor data to drastically simplify simulations of future fusion experiments
- Created makeshift databases, retrofitted search algorithms, and performed extensive statistical analysis on C-Mod data
- Results published in *Nuclear Fusion* (co-author) and presented at the APS plasma physics conference (first author)

Internships

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 and DEI

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

Leadership

Global Teaching Labs (South Korea, South Africa, Botswana, Bahrain) Jan 2022, Jan 2023, Jan 2024
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

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