Arunim Agarwal

(650) 690-2992 | arunim@upenn.edu | linkedin.com/in/arunim-a | arunim.fyi

Education

University of Pennsylvania | GPA: 3.96 — Aug. 2021 – Present
Vagelos Integrated Program in Energy Research (VIPER)

Bachelor of Applied Science in **Computer and Information Science**
Bachelor of Arts in **Physics**, Minor in **Mathematics**
Coursework at Penn [* = Graduate-level]: Principles of Deep Learning*; Advanced Topics in AI*; Quantum Mechanics*; Data Structures & Algorithms; Applied Machine Learning; Algorithmic Game Theory; Advanced Linear Algebra; Electromagnetism; Analytical Mechanics; Ethics
Other Coursework: Intro to ML Safety (Center for Safe AI)

Henry M. Gunn High School | GPA: 4.0 — Aug. 2017 – June 2021

Experience

Center on Long-Term Risk – Summer Research Fellow | London, UK — July 2023 – August 2023
- Used game theory and opponent shaping to lead reinforcement learning agents to cooperative equilibrium in the one-shot prisoner's dilemma, with Caspar Oesterheld.
- Investigated applications to cooperation between autonomous agents (eg. self-driving cars).
- Ran experiments and trained models to verify whether theoretical equilibria are reached using Jax and Pytorch.

Supervised Program for Alignment Research – Intern | Berkeley, CA — Feb. 2023 – May 2023
- Analyzing algorithms to detect backdoors within few-layer transformer ML models, with Marius Hobbhahn
- Exploring the foundations of security against trojans in ML

Forecasting Research Institute – Research Assistant | Philadelphia, PA — June 2022 – Apr 2023
- Contributed to understanding forecasts with conditional probability trees, developing a forecasting proficiency test, and a forecasting tournament under Dr. Philip Tetlock and Dr. Ezra Karger.
- Resulted in improved forecasts of global catastrophes, see report

Holy Grail – Intern | Mountain View, CA — Apr. 2021 – Aug. 2021
- Tackled modular direct air carbon capture device technology at a startup during seed round stage ($2.7M raised)

UC Santa Cruz Earth and Planetary Science – Research Intern | Santa Cruz, CA — July 2020 – June 2021
- Analyzed satellite images to demonstrate ice sheet retreat. Drafted a manuscript under Dr. Tulaczyk

MakeX Palo Alto – Mentor | Palo Alto, CA — Sep. 2018 – Aug. 2021
- Volunteered (300+ hrs) at a student-run makerspace. Helped visitors create, managed budget, site, outreach.

Projects and Activities

Safe AI @ Penn | University of Pennsylvania — 2023 - Present
- Lead organizer of a technical AI research reading group for graduate and undergrad students

Abuse and Sexual Assault Prevention Club | University of Pennsylvania — 2021 - Present
- Education Chair (2022-23): developed workshop material and researched university policies to make campus safer

Alto Clef: PA Public Piano | Palo Alto Public Art Commission — 2021
- Microgrant Project Lead: Installed a piano painted by student artists. Photos and info at arunim.fyi/piano

Village Studio | Gunn High School — 2019 - 2021
- Co-Founder: started a student-run makerspace as a creative outlet for high schoolers, pitched to PTSA and administration for funding, managed a team of student-mentors and $18K+ in budget. Website: gunnvs.org

Skills

Languages: English, Hindi, and Spanish
Programming: Python, C, Java, PyTorch, Jax
CAD/Design Software: Adobe Illustrator, Cinema 4D, CorelDraw, Sketchup, SolidWorks

Awards

College of Arts and Sciences Dean's List (2022, 2023)
National Merit Scholarship Finalist (2021)
AIME Mathematical Exam Qualification (2018, 2019)
President's Volunteer Service Gold Award (2018)