KAAVYA KUMAR

Computer Science & Philosophy Ellison Scholar at Oxford University | UWCSEA East Graduate
AI Development & Policy | Quantum Computing | Programming | Philosophy

EDUCATION

Aug 2021 - May 2025
United World College South East Asia (East Campus) | IB Diploma
STEM Leadership Activities: Coding for Good, Coding for All, Web Development Studio, Robotics Club
Sports: Varsity badminton

SCORES

IB Diploma: Score: 44/45 (HLs: Math Analysis & Approaches, Computer Science, Physics, Economics SLs: French B, English Literature)
IGCSEs: 9 A*s (CIM, Additional Mathematics, Co-ordinated Sciences (Double Award), Economics, First Lang. English, World Literature, French B, Design & Technology)
SAT: 1560 (790 Math, 770 R&W)
Duolingo English Test: CEFR C2 (160/160 score)

AWARDS

1. OxAI Hackathon - 2nd place
Won second place in a hackathon on biosecurity as the only first-year team
2. Emergent Ventures Grant winner ($4000)
Selected by Prof. Tyler Cowen to be grant recipient for research on AI agents.
3. TCS Sustainathon 3rd place winner & Best Speaker
Made app to reduce pay secrecy in workplaces; received award from then-Singapore president, Pres. Halimah Yacob.
4. CREST Gold Award
Won award that recognises exceptional high school research, for research on quantum game theory.

SKILLS

Programming Languages: Python, Swift, Java, Web development, Haskell, Scala

RESEARCH EXPERIENCE

Institute of High-Performance Computing | A*STAR — June 2024 - May 2025
- Researched LLM-based agents (AutoGPT and gpt-engineer) code generation capability
- Replicated results from various studies to explore the field
- Writing research paper on findings
- Wrote policy paper on risks of LLM-based agents; published preprint: https://ssrn.com/abstract=5000207

Institute of High-Performance Computing | A*STAR — June 2023 - Dec 2024
- Researched the quantum Volunteer's Dilemma, which has not been analysed before
- Found a general Nash equilibrium and Pareto optimal point
- Learned complex math skills (linear algebra, multivariable calculus)
- Went through full research process -- exploring the field, formulating proofs, communicating findings, revising based on peer-reviewed feedback, publishing
- Accepted for publication at PRResearch as 2nd author: https://journals.aps.org/prresearch/accepted/d207aJ97J9c1d40be1802bd52442422757283c967

Non-trivial Fellowship | Fellow & Prize winner — June 2023 - Aug 2023
- Researched risk assessments to mitigate risk of unrestricted access of frontier LLMs
- Learned about technical AI (e.g. transformers and LLM benchmarks) and US governance structures
- Won 3rd place overall & 2nd place in the AI Governance Challenge
- Published preprint: https://ssrn.com/abstract=4709661
- Created video about project: https://www.youtube.com/watch?v=ZoAg7t5OK_k

PROFESSIONAL + ENTREPRENEURIAL EXPERIENCE

NeuroTrends | Intern — Dec 2025 - Dec 2025
- Automated the extraction of metadata from prominent neuroscience journals such as DOI, journal name, author email, etc.
- Completed through University of Oxford's micro-internship program

MozWatch | Founder & developer — Aug 2024 - Present
- Developed app to classify between different genera of mosquitoes using an image classification ML model -- accuracy 88%
- Published on App Store: https://apps.apple.com/sg/app/mozwatch/id6737189614

InnovationX | Co-founder — Aug 2023 - Dec 2024
- Created 3 competitions -- math, economics, and technology -- with 100+ students from 15+ schools across Singapore, $3000+ in sponsorship from Tata Consultancy Services
- Website: https://innovationxsg.com/

Web Development Intern at HOPE — June 2023 - Aug 2023
- Web development internship at a non-profit focused on mental health
- Implemented an AI chatbot on the website & improved website SEO

Sharana I Pondicherry, India — Jul 2022 - Aug 2022
- Taught Spoken English and computer classes to high school and college students
- Wrote blog about experience: https://sharana.org/2022/10/10/a-truly-memorable-3-weeks-a-volunteers-experience-at-sharana/

PROGRAMS

Ellison Scholars | Ellison Institute of Technology — Present
- Scholarship program started by Larry Ellison which covers full tuition and living expenses for 4 years at the University of Oxford
- Scholars also work on a project for a key global issue – I will likely work in AI & Healthcare

Bluedot AI AGI course — Dec 2025
- Read relevant literature and learned about main problems in AI alignment and safety

Participant | European Summer Program for Rationality — Aug 2024
- Participated in a fully-funded 10-day summer program at Queen's College, Oxford
- Learned about vastly different and endlessly interesting topics from Fermi estimates, modelling economic shocks, painting, Gödel's Incompleteness Theorems, emotions, and more