

Raj Pabari

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EDUCATION

- **University of Toronto** Sep 2026 - Present
Quantum Computing PhD Toronto, ON
- **Stanford University** Sep 2023 - Jun 2026
Theoretical Computer Science, MS Palo Alto, CA
 - GPA: 4.06
- **Stanford University** Sep 2022 - Jun 2026
Pure Mathematics, BS Palo Alto, CA
 - GPA: 3.97
- **Palomar College** Aug 2020 - Jun 2022
Dual Enrollment (16 courses) San Marcos, CA
 - GPA: 4.0

RESEARCH AND PROJECTS

- Raj Pabari, Udaya Ghai, Dominique Perrault-Joncas, Kari Torkkola, Orit Ronen, Dhruv Madeka, Aviad Rubinstein, Dean Foster, and Omer Gottesman. *A shared-revenue Bertrand game*. 2025. arXiv: [2502.07952](https://arxiv.org/abs/2502.07952). Under submission to *Games and Economic Behavior*. URL: arxiv.org/abs/2502.07952
- Raj Pabari, Andrew Sullivan, and Roger Blandford. *Gravitational radiation from early universe black hole clusters*. Work in progress; preliminary results available upon request. URL: rajpabari.com/research-courses
- Zeyuan (Victor) Zhou, Kun Liu, Noah Berthussen, Raj Pabari, Aleksander Kubica, and Yongshan Ding. *SodaQEC: Soft-Adaptive Syndrome Extraction for Hierarchical Quantum Error Correction*. Under submission to ASPLOS '27. 2026. URL: rajpabari.com/research-courses
- Raj Pabari and Iris Zhou. *A mean-field theory of training deep neural networks*. Final project for CS 231N (Deep Learning for Computer Vision) at Stanford; received a best paper award in 564-student course. 2024. URL: rajpabari.com/assets/pdf/cs-231n-final-project.pdf
- Raj Pabari. *Efficient parallel discrete sampling via Euler method and Picard iteration*. Final project for CS 263 (Counting and Sampling) at Stanford. 2023. URL: rajpabari.com/assets/pdf/cs-263-final-project.pdf
- Andres Carranza, Raj Pabari, and Dhruv Pai. *FlowHF: Generative flow networks for RLHF*. Final project for CS 224R (Deep Reinforcement Learning) at Stanford. 2023. URL: rajpabari.com/assets/pdf/cs-224r-final-project.pdf

SPEAKING

(* = INVITED)

- *Amazon, Nov 2025. "Quantum error correction from first principles."
- *Yale Quantum Institute, Oct 2025. "Quantum error correcting codes in increasing levels of generality."
- *Stanford Compact Objects Group, Aug 2025. "Gravitational radiation from early universe black hole clusters."
- *Stanford Meeting of Astrophysics Students, Aug 2025. "Dimensional analysis for genuine physics."
- *Imperial College London, Mar 2025. "A shared-revenue Bertrand game."
- *Kyoto Prize Symposium Gala, Mar 2025. "Experiences and reflections."
- *Amazon, Sep 2024. "A shared-revenue Bertrand game."
- *SEMICON West Conference Panel, Jul 2022. "[Elevating semiconductor industry image and awareness.](#)" [🌐]
- TEDx Talk, Oct 2021. "[The renaissance of capitalism.](#)" [🌐]

FELLOWSHIPS AND SCHOLARSHIPS

(\$ = USD)

- Stanford Major Grant, \$9,000, Jul 2025 - Sep 2025.
- Botha-Chan Innovation Fellowship, \$20,000, Jun 2023 - Aug 2023.
- Stanford Fund Scholarship, \$350,000, Sep 2022 - Jun 2026.
- Amazon Future Engineer Scholarship, \$40,000, Sep 2022 - Jun 2026.
- Elks Most Valuable Student Scholarship, \$4,000, Sep 2022 - Jun 2026.
- Kyoto Prize Scholarship, \$10,000, Sep 2022 - Jun 2024.
- Burger King Scholarship, \$1,000, Sep 2022 - Jun 2023.
- The Indus Entrepreneurs Fellowship, \$2,350, Jul 2020.
- SEMI High Tech U Scholarship, \$1,000, Feb 2019.
- Armed Forces Communications and Electronics Association Scholarship, \$2,500, Aug 2018.
- Securities Industry and Financial Markets Association InvestWrite Scholarship, \$4,000, Jun 2018.
- Professional Engineers in California Government Scholarship, \$1,000, Mar 2018.

PROFESSIONAL EXPERIENCE

- **Amazon** Jun 2024 - Sep 2024
Applied Science Intern New York
 - Built a game theoretic framework to optimize fees for third-party sellers and understand incentives on the Amazon marketplace, resulting in first-author journal submission [arXiv:2502.07952](#).
 - Launched my variable review period scheme from 2023 in a production lab to collect online data.
- **Amazon** Aug 2023 - Sep 2023
Applied Science Intern New York
 - Conducted research in the Supply Chain Optimization Technologies team, using deep reinforcement learning for buying and placing the 300M+ products in Amazon's global network as introduced in [arXiv:2210.03137](#).
 - Modified the learning objective to enable the reinforcement learning agent to buy products with variable review periods, an important step for bringing the periodic review inventory control system into reality.
- **Amazon** Jun 2023 - Aug 2023
Software Engineering Intern Seattle
 - Improved production code for buying algorithms that manage ordering for Amazon's worldwide supply chain.
 - Built new functionality to improve sellers' experience by providing automated insights into Amazon's ordering of their products.
- **SalesBoom.AI**  Jan 2023 - Sep 2023
Founder and CTO Palo Alto
 - SalesBoom.AI harnessed generative AI for personalized outreach at scale. Salespeople could generate customized emails in seconds, reducing the amount of time they spend on outreach while increasing conversion rates.
- **EMD Electronics** Aug 2022 - May 2023
Data Engineering Intern Remote, Part-Time
 - Used machine learning to analyze data and draw insights on chemicals for more precise and effective doping, deposition, and cleaning for semiconductors.
- **Northrop Grumman** Jun 2022 - Nov 2022
Software Engineering Intern San Diego
 - Contributed to classified military projects, unit-tested production code, and updated systems in accordance with modern standards.
- **Off Grid Technologies, Inc.**  Jan 2020 - Aug 2022
Founder and CEO San Diego
 - Off Grid Technologies created the OG Charger, a portable hydroelectric generator that harnessed the power of streams and rivers to keep mobile devices charged without the power grid.

TEACHING AND VOLUNTEERING

- **Stanford** Mar 2026 - Jun 2026
Teaching Assistant
 - Teaching assistant for 60-student real analysis (following Ross "Elementary Analysis"). Hosted office hours, writing homework solutions, graded homework, led review sessions, and wrote, proctored, and graded three exams.
- **Stanford** Jan 2024 - Mar 2026
Homework Grader
 - Graded homework and produced solution sets for various introductory and upper-level math courses: topology and geometry, stochastic processes, complex analysis, honors real analysis, and probability theory.
- **Tutors For Good** Mar 2020 - Dec 2022
Founder
 - Provided a combination of free and paid online tutoring during COVID-19 with over 15 tutors and \$10k of impact.
 - I personally tutored throughout Tutors For Good, totaling hundreds of hours of math and computer science.
- **US Embassy in Kenya** Jul 2022 - Nov 2022
College Advisor
 - Advised Kenyan students on college admissions in the United States through the EducationUSA program .
- **University of California San Diego** Jun 2022 - Aug 2022
Instructor
 - Co-taught and developed curriculum for 50-student summer course "Business Research for Innovation and Growth" with Prof. Vish Krishnan.
- **Greater San Diego Science and Engineering Fair** Mar 2018 - Jun 2022
Student Leadership Board
 - Supported the county science fair operations in media and communications, outreach workshops, peer mentorship, and video production. Served as the President from 2021-2022.

PRESS

- Appeared on S13 finale of Chinese problem-solving game show with 500M viewers in March 2026. [“Super Brain”](#) [🌐]
- Authority Magazine, Jul 2020. [“Young social impact hero”](#) [🌐]
- California Governor Gavin Newsom, May 2020. [“Spirit of service recognition.”](#) [🌐]
- San Diego Union-Tribune, Apr 2020. [“Carlsbad teen launches online tutoring service for quarantined students.”](#) [🌐]

SELECTED COURSES

(* = GRADUATE)

• Physics

- *Physics 330: Quantum Field Theory (Peskin & Schroeder)
- *Physics 262: General Relativity (Thorne & Blandford)
- *Physics 230: Graduate Quantum Mechanics (Sakurai)
- Physics 170: Statistical Mechanics (Kivelson, Jiang, & Chang)
- *Physics 362: Cosmology (Susskind)
 - [Final project on quantum particle creation isotropization as an alternative to inflation](#)
- *Physics 216: Back of the Envelope Physics (Goldreich, Mahajan, & Phinney)
- Independent study: Electrodynamics (Griffiths), Classical Mechanics (Landau & Lifshitz)
- Palomar College: Mechanics, E&M, “Modern” Physics (Giancoli, three semesters)

• Computer Science

- *CS 231N: Deep Learning for Computer Vision
 - [Final project using statistical mechanics for neural network training dynamics](#) (best paper award)
- *CS 259Q: Quantum Computing
- *CS 229M: Machine Learning Theory
- *EE 276: Information Theory
- *CS 263: Counting and Sampling Theory
 - [Final project using Picard iteration for efficient parallel discrete sampling](#)
- *CS 224R: Deep Reinforcement Learning
 - [Final project using GFlowNets as an alternative to PPO for RLHF](#)
- CS 140E: Embedded Operating Systems

• Mathematics

- *Math 236: Stochastic Differential Equations
- Math 144: Topology and Differential Geometry
- Math 173: Partial Differential Equations (Vasy)
- Math 171: Mathematical Analysis (Johnsonbaugh & Pfaffenberger)
 - [Final paper proving the Arzela-Ascoli theorem](#)
- Math 120: Abstract Algebra (Dummit & Foote)
 - [Final paper proving the impossibility of doubling the cube](#)
- Math 158: Stochastic Processes for Applications

ADDITIONAL INFORMATION

Exam Scores: Physics GRE - 920 (82nd percentile), ACT - 36 (perfect score)

Programming Languages: Python, C++, C, Java, Wolfram Mathematica, Assembly, JavaScript

Languages: English (native/fluent), French (intermediate), Italian (novice)

Interests: Ultramarathons (100km+), Poker, Philosophy, Blogging (rajpabari.com/blog), Hiking