

# Raj Pabari

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## EXPERIENCE AND PROJECTS

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- **Amazon, Intern** (2024) - Using game theory, specifically a shared-revenue variant of the Bertrand model, to understand incentives on the Amazon marketplace. Building the theoretical framework to optimize fees for third-party sellers and improve pricing strategies (intended to submit to ACM EC). Ready my research from summer 2023 for August 2024 production launch to collect online data.
- **Amazon, Intern** (2023) - 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. Modified the learning objective to enable the RL agent to buy products with variable review periods, an important step for bringing the periodic review inventory control system into reality.
- **EMD Electronics (Merck Group), Data Engineering Intern** - Innovated in specialty gases for semiconductor manufacturing to accelerate and optimize internal R&D for the discovery of new gases.
- **Northrop Grumman, Software Engineering Intern** - Contributed to classified military projects, hardened software systems, and updated code in accordance with modern standards.
- **SalesBoom.AI, Founder/CTO** - Used generative AI for personalized outreach at scale. Generated customized sales emails in seconds, saving salespeople time while increasing conversions.
- **Off Grid Technologies, Inc., Founder/CEO** - Developed a portable generator that harnesses the energy of streams and rivers to charge mobile devices without the power grid.
- **Robotics** - Contributed to various projects, including using computer vision to shoot balls into a target, autonomously controlling robot motion, and programming a UR 3E collaborative robot (robotic arm).
- **DNA Storage, 2020 Science Fair** - Developed a Google Cloud based solution to archive digital data using synthetic DNA. Partnered with Thermo Fisher. 1st Place countywide in computer science and scholarships from Armed Forces, American Military Engineer, and Sigma Xi honor society.
- **UCSD, Lecturer** - Co-taught "Business Research for Innovation and Growth" with Prof. Vish Krishnan.
- **TutorsForGood.com, Founder** - Created tutoring platform with over \$10k of impact during COVID.

## EDUCATION AND SKILLS

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- **School:** Stanford University, BS in Math + MS in Computer Science
- **GPA:** 3.94, **ACT:** 36 (Perfect Score)
- **Courses:** Game Theory, ML Theory, Stochastic Calculus, Complexity Theory, Topology, Linear Algebra & Matrix Theory, Probability, Information Theory, Graph Theory, Partial Differential Equations, Investment Science, Data Structures, OOP, Cryptography, Statistical Mechanics, Deep RL, Deep NLP
- **Course Projects:** Using GFlowNets as an alternative to PPO for RLHF, statistical mechanics perspective on learning dynamics of deep neural networks, iOS app using AR for remotely detecting dermatitis
- **Technical Skills:** Python, Java, C++, C, JavaScript, Linux, AWS, PyTorch, Full Stack
- **Interests:** Running (completed marathon & 4x4x48), Poker, Philosophy, Blogging, Hiking, Camping

## PRESS, AWARDS, AND HONORS

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- Scholarships - Stanford, Amazon, Kyoto Prize, Elks Most Valuable Student, Burger King
- 2nd Place - Stanford Poker Tournament (5/12/23) sponsored by Jump, Jane Street, Two Sigma, HRT
- [Spirit of Service Recognition](#) - California Governor
- [Young Social Impact Hero](#) - Authority Magazine
- [Guest Speaker](#) - TEDx Talk, TieCon, SEMICON West, Western Mass. Business Show, and more
- Botha-Chan Innovation Fellowship 2023 - SalesBoom.AI, Fellowship Recipient
- Nominee - 15th Annual San Diego Top Tech Awards
- Securities Industry and Financial Markets Association (SIFMA) InvestWrite - 1st Place Nationwide
- Former San Diego Math Circle Member (5 years)