# Samrat Sahoo

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## Education

**Stanford University (Incoming)** September 2025 – June 2027
*Master of Science in Computer Science, Concentration in AI* *Stanford, CA*

**Georgia Institute of Technology** Aug. 2021 – May 2025
*Bachelor of Science in Computer Science, Minor in Economics | GPA: 3.97/4.00* *Atlanta, GA*

- Concentrations: Artificial Intelligence + Systems and Architecture

## Work Experience

**Software Engineering Intern** May 2023 – July 2023
*Cruise Automation (YC W14)* *San Francisco, CA*

- Refactored the access control system, saving 100+ hours of engineering time per month (PostgreSQL/OPA)
- Engineered widgets displaying exit codes, and execution cost, saving 1000s of dollars (Kubernetes/Pulumi)
- Extended simulation platform's search engine to drive additional insights into tests (ElasticSearch/BigQuery)

**Software Engineering Intern** Jan. 2023 – May 2023
*Visor* *New York City, NY*

- Redeveloped the HubSpot chat integration for better user experiences for 1000+ users (Vue.js/HubSpot API)
- Built the settings integrations page from scratch for different CRMs (HubSpot/Salesforce/Atlassian APIs)
- Redesigned the Visor home page, optimizing for real-time filtering via graph manipulation (CloudstoreDB)

**Software Engineering Intern** June 2022 – August 2022
*Fidelity Investments* *Westlake, TX*

- Implemented a data interaction application (Vue.js/Express.js/AWS), saving 100+ hours of manual data mining
- Delivered automation APIs (GraphQL/Python) to 100 teams to interact with legacy engineering infrastructure
- Deployed data mining applications to 3000+ developers (Jenkins/ uDeploy), improving integration testing time

**Software Engineering Intern** March 2021 – August 2021
*Roboflow (YC S20)* *Des Moines, IA*

- Created the training procedure for the Roboflow classification network (PyTorch/Docker) for 3 enterprise users
- Initiated the Roboflow SDK (Python) enabling better workflow integrations for 350,000+ developers
- Roboflow Python package integrated with YOLOv5 (25,000 stars on Github), increasing users by 1000 per month

## Research Projects & Publications

**Financial Portfolio Optimization Using Deep Reinforcement Learning** | *In Progress*

- Created an empirically-driven reinforcement learning environment to optimize retirement portfolios, simulating real-world circumstances better than synthetic data-driven environments
- Trained a soft actor-critic agent to create an optimal portfolio based on a user-defined risk-reward threshold

**Guiding Reinforcement Learning Exploration using Exploration Critique Networks** | *In Progress*

- Leveraging cross-attention between past trajectories and similar state transitions to guide RL exploration
- Applying ideas from intrinsic curiosity modules to determine novelty of state transitions for self-supervised learning

**Scatter Protocol** | *First-Authored at IEEE International Conference on Blockchain (Blockchain 2024)*

- Developed an incentivized and trustless protocol for decentralized, federated learning (Solidity/Go-Ethereum)
- Created a decentralized, peer2peer node system to split machine learning loads across a network (GoLang/LibP2P)
- Designed a secure machine learning environment by introducing OS isolation using Open Container Initiative

## Technical Skills

- **Languages and Frameworks:** PyTorch, NumPy, Python, Javascript, Java, Solidity, Typescript, GoLang, React.js, Vue.js, Nuxt.js, Next.js, Express.js, Flask, React.js, MongoDB, React Native, Assembly, C, LibP2P, SQL, Gymnasium (Reinforcement Learning)
- **Developer Tools and Libraries:** Git, Amazon Web Services (Simple Queue Service, Elastic Container Service), Google Cloud Product (Cloud Run), REST API, Docker, Docker Compose, GitHub Actions, Linux, CLI, RabbitMQ, Firebase, OpenAI Vector Store, Postman