

Sina Hazeghi

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EDUCATION

University of Pennsylvania | Philadelphia, PA

Expected December 2027

- Master of Science in Engineering, Robotics

Rutgers University | New Brunswick, NJ

December 2024

- Bachelor of Science in Computer Science and Mathematics, *Summa Cum Laude*
- GPA: 3.96/4.00 ; SAS Academic Excellence Scholarship Recipient

SKILLS

- Languages: Java, Python, C/C++, JavaScript, Typescript, HTML, CSS, X86 Assembly, SQL, R
- Technologies: AWS, CUDA, Git, JAX, Docker, GCP, Pandas, PyTorch, HuggingFace, fast.ai, Transformers, Access DB

WORK EXPERIENCE

BNY

August 2025 - August 2026

Software Engineer

New York, NY

- Developed an agentic AI orchestration engine ("Eliza Holmes") using CrewAI and MongoDB to dynamically instantiate agentic workflows to accelerate client onboarding by up to 90% and winning BNY's 2025 technical innovation award
- Designed a token-aware hierarchical document indexing engine with LLM summary trees and MongoDB tree-caching, cutting LLM context consumption by 70–90% and query latency from 30s to <20ms during bulk entity onboarding
- Implemented a pluggable multi-tiered guardrail framework incorporating dynamic Python validators, thread-safe execution tracking, and adversarial judge agents, catching 83% of output errors prior to end-user review
- Engineered enterprise Java microservices using Spring Boot, GraphQL, and OracleDB to empower agents to integrate seamlessly with legacy databases and existing KYC/AML onboarding infrastructure
- Built an Angular prompt-management platform for developers to analyze runtime context, rapidly fine-tune agentic prompts, and apply hot-fixes without CI/CD redeployments—resolving ~70% of user-reported KYC workflow bottlenecks
- Diagnosed bulk onboarding failures during 10x document scaling as agentic iteration budget exhaustion; resolved by engineering multi-threaded batch processing to duplicate crew instances across parallel workloads, stripping irrelevant context to eliminate execution errors and accelerate bulk onboarding workflows by 35%

Rutgers University - [PRACSYS Lab](#)

December 2023 – May 2025

Student Researcher

New Brunswick, NJ

- Evaluated differentiable physics backends (Taichi, NVIDIA Warp, JAX/Jraph) for simulating NASA's cable-driven Tensegrity robot, converging on a fully learned JAX/Jraph simulator that runs 100x faster than MuJoCo
- Optimized Graph Neural Network (GNN) inference by 1.5x using JAX/Jraph over baseline PyTorch, enabling downstream research in MPC and open-loop control for terrain-based robotics applications
- Trained GNN simulators under partially-observable state data to test real2sim transfer, informing research direction later formalized in "CableRobotGraphSim," accepted for oral presentation at L4DC 2026

Pfizer

May 2024 - August 2024

Process Development Intern

Pearl River, NY

- Deployed Shiny for Python website to automate inventory processes and database integration saving 2-3 hours/shipment
- Updated R-Shiny app and underlying SQL database by merging subroutines to add image compatibility, PDF integration with LaTeX, and dynamically populated protocols, simplifying analyst workflows by 60%

PROJECTS

Maze Solver Motion Generation Implementations

- Devised a custom task in Python and MuJoCo for a robot to navigate a maze of obstacles from random start points
- Implemented Kinodynamic RRT planner with a 96% success rate, achieving navigation on average of 5.08 seconds
- Devised GPU-accelerated training scripts using Torch RL to leverage distributed training to reduce training time by 95%
- Evaluated A2C, PPO and SAC algorithms with various advantage estimation and policy formulation methods from scratch in PyTorch to maximize successful navigation
- Tuned algorithms to surpass baseline implementations, achieving a 22% higher success rate after 10,000 training episodes, with successes taking on average only 2.38 seconds