

Yaakov Seif

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EDUCATION

Yeshiva University, New York, NY

Expected Graduation: May 2027

Bachelor of Science in Computer Science, Distributed Systems Track

WORK EXPERIENCE

FINOS TraderX – Yeshiva University — Research & Development, AI Spec-Driven Development

May 2026 - Present

- Researched AI spec-driven development with FINOS, evolving TraderX through incremental spec-driven states
- Wrote specifications and architecture decisions that AI coding agents turned into working services
- Coordinated Claude Code and OpenAI Codex agents in parallel with shared conventions and review gates
- Collaborated with TraderX's original creators to contribute spec-driven practices to the open-source project
- Selected to speak at the Open Source in Finance Forum (OSFF) on AI spec-driven trading systems

The Seforim Sale — Assistant CIO

January 2026 - Present

- Built a full-stack inventory and author search system over thousands of titles in PostgreSQL
- Integrated the Shopify Admin API in Java to enrich listings with author data at ~95% match accuracy

CTRL+V Inc — IT Technician Intern

Summers 2023 & 2024

- Installed and decommissioned servers, racks, and network equipment in data centers and offices
- Supported data center relocations, migrating servers and network infrastructure with minimal downtime

PROJECTS

Order Management System & Matching Engine — FINOS TraderX (Java)

Summer 2026 - Present

- Led the team re-architecting TraderX into a sell-side OMS and risk platform, earning a \$25,000 Google grant
- Built an event-sourced LMAX Disruptor matching engine, replicated on a fault-tolerant Aeron Raft cluster
- Implemented pre-trade risk, FIX order entry, a limit order book, options, bonds, and OTC rate products
- Delivered an end-of-day pipeline sending positions and market data to an external risk engine
- Scaled to ~260K orders/sec with sub-1.5 ms median latency and automatic leader failover
- Deployed on Google Kubernetes Engine with CI/CD, OpenTelemetry, Grafana, and a kdb+ tick store
- Verified with 1,200+ automated tests running in CI and 200+ build, deployment, and verification scripts, covering trade processing, risk integration, and recovery.

SecureNet Distributed Security Platform (Java, C, Bash)

Spring 2026

- Architected a distributed home security platform of 8 microservices on REST, MQTT, and PostgreSQL
- Built fault tolerance with health-aware load balancing, service discovery, and Raft-coordinated leader failover
- Built the homeowner dashboard for device onboarding, lock control, alerts, and video playback
- Developed ESP32 firmware in C for smart locks, motion sensors, and cameras, tested on physical microcontrollers
- Implemented secure device registration, OTA firmware updates, and MQTT telemetry and heartbeats
- Built event and notification services that keep alerts consistent through node failures
- Validated the platform end to end with unit, integration, failover, and load testing

SKILLS

Languages: Java, C/C++, Python, JavaScript, SQL

Technologies & Tools: Claude Code, OpenAI Codex, Spring, REST, FIX, Aeron, LMAX Disruptor, Raft, Docker, Kubernetes, Kafka, NATS JetStream, Redis, MQTT, PostgreSQL, MariaDB, MongoDB, kdb+/q, Google Cloud (GKE), AWS, OpenTelemetry, Grafana, Prometheus, GitHub Actions, Git, Linux

Coursework: Data Structures, Algorithms, Distributed Systems, Operating Systems, Database Implementation, Artificial Intelligence, Programming Languages, Networking, Parallel Programming, Cybersecurity, Cloud Architecture, Trading Systems