

# Shachar Koller

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## EDUCATION

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### Yeshiva University – Yeshiva College

*Bachelor of Science in Computer Science*

New York, NY

Aug. 2024 – May 2028

### S. Daniel Abraham Israel Program

Jerusalem, Israel

2022 – 2024

## PROJECTS

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### Distributed Banking and Trading System | *Python, Kubernetes, Redis, DigitalOcean*

June – Aug. 2025

- Designed and implemented a distributed, fault-tolerant trading and banking platform as part of learning experience on a 5-member team
- Led deployment and infrastructure resiliency by migrating services to Kubernetes, creating local K3D testing environments, and deploying a production instance on DigitalOcean Cloud
- Built and optimized core trade booking and position aggregation services, achieving throughput of 140,000 trades/second and ensuring accurate real-time PnL and position tracking

### Document Management and Search Engine | *Java, Gson*

- Designed and implemented a production-quality Java document store with B-Tree-backed storage, on-disk JSON persistence (Gson), and lazy deserialization
- Built a Trie-powered index enabling fast keyword/prefix search and metadata filtering; supported bulk deletions and compound query variants
- Added LRU eviction using a MinHeap on last-use timestamps, enforcing strict byte and document count limits to guard memory
- Provided undo for single and batched operations using a command stack and command sets, enabling targeted URI-level reversals

### Pi-hole DNS Server | *Raspberry Pi, DNS, Network Administration*

- Deployed and maintained a Pi-hole DNS server on Raspberry Pi to block advertisements and malicious websites across a home WiFi network
- Configured network-level ad blocking for 50+ devices simultaneously, reducing unwanted traffic, improving browsing performance, and protecting susceptible individuals

### Fitness Tracker | *Python, Streamlit, Redis*

- Built a full-stack fitness tracking website with a Streamlit front-end, Python-based business logic, and Redis database persistence
- Designed database backup and restore features, improving data recovery reliability

## TECHNICAL SKILLS

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**Languages:** Java, Python, C, SQL

**Databases:** SQLite, Redis, Relational Databases, Key-Value Stores

**Developer Tools:** Git, GitHub, Docker, Kubernetes, K3D, JUnit, Maven, DigitalOcean, Bash Scripting

## OTHER WORK EXPERIENCE

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### Counselor / Equipment Manager

June 2025 – Aug. 2025

*Mach Hach Ba'aretz*

Israel

- Managed comprehensive logistics for 50+ high school students during a 6 week Israel travel program
- Coordinated daily schedules, activities, and maintained team morale in high-pressure environment
- Developed crisis management and organizational skills through hands-on leadership responsibilities

### Counselor

Summers 2021-2024

*Camp Moshava*

- Supervised and mentored children ages 11-17 in structured summer camp environment
- Enhanced communication and leadership abilities through direct youth engagement