

EDUCATION

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**Cornell University, College of Engineering***Aug 2021 – May 2025 (expected)*

- Bachelor of Science in Computer Science and Electrical and Computer Engineering. GPA: 3.68
- Relevant Course Work: Computer Architecture, Operating Systems, Algorithms, Stochastic Control, ML, RL

EXPERIENCE

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**Full Stack Developer – IFT Software***Jan 2022 - Present*

- **Built a platform** that enables users to subscribe to **machine learning-based auto trading algorithms** to manage cryptocurrency exchange accounts.
- Designed and developed **backend microservices** for user authentication, strategy management, subscription handling, and payment services.
- Developed **REST APIs** using **TypeScript**, **ExpressJS**, and **Prisma**
- **Implemented asynchronous task management** using **BullMQ** for periodic trade execution, processing of strategy signals, and monitoring incoming payments.
- **Developed a Binance API client** using **Node.js**. Published it to the **npm registry** for public use.
- Focused on **comprehensive error handling and testing** at every step.
- **Developed the frontend** using **Next.js** and **TypeScript**.

**Teaching Assistant & Workshop Facilitator – Cornell University***Aug 2022 - Present*

- Lead discussion sections, hold office hours, graded assignments for the **Discrete Math** course at Cornell.
- Taught a 1-credit class for the **Linear Algebra for Engineers** course at Cornell University.

PROJECTS

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**ERP Platform***June 2023 - September 2023*

- **Developed a storage management system** for a multi-level warehouse environment.
- **Designed and implemented RESTful APIs** using **Express.js** and **Prisma** to efficiently fetch, update, and organize storage units.
- **Developed the frontend** using **Next.js**, **Redux**, and **TypeScript**.

**Bitcoin Wallet***June 2022 - September 2022*

- **Developed a Bitcoin JSON-RPC client** to interact with the Bitcoin node for wallet creation, transaction management, and blockchain data access.
- Built functionality for receiving, signing, and broadcasting transactions using cryptography libraries for secure public/private key management and address generation.
- **Implemented multi-threaded transaction listener** to monitor mempool transactions and store them in a database, using mutexes and condition variables for thread synchronization.
- **Designed an SQL query builder** to manage database interactions.
- Developed the entire project in C++.

**Trading Strategy Development – Stochastic Systems: Estimation and Control Class***March - May 2023*

- Applied the **unscented Kalman Filter** to **pairs trading** to exploit mean-reverting behavior in correlated and cointegrated cryptocurrency pairs.
- Developed a **state-space model** with dynamically updated parameters to predict relationships between assets, using real market data for validation.
- Implemented a **systematic trading strategy** that effectively managed risk and maximized profitability, achieving a **22.71% profit in USD over 408 days of back-testing**.

SKILLS

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- Proficient: C++, JavaScript/TypeScript, Java, Python, HTML/CSS
- Frameworks and Libraries: React, NextJS, ExpressJS, Prisma, Fastify, Redux, Django, Kafka, BullMQ, PostgreSQL, Redis
- Tools: Linux, Git, Github, Docker, Postman, Bazel, CMake