

Jonathan A. Klein

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EXPERIENCE

Software Development Engineer, Amazon, New York, NY

Jun 2025 – Present

Head Teaching Assistant, Lehigh University, Bethlehem, PA

Jan 2024 – May 2025

- Develop and structure learning resources and assignments for Data Structures & Algorithms for **350+** students
- Assist professor in designing assignments and instructional materials for Operating System Design
- Lead recitation sessions and hold **8** office hours every week, providing coding instruction and personalized support
- Supervise a team of **15** graders, managing workflow for **30+** assignments

Software Engineering Intern, FinFolio, Remote

May 2024 – Aug 2024

- Optimized 50+ SQL queries and refactored .NET code, improving financial report generation time by over **30%** and handling datasets of **10,000+** rows
- Conducted root cause analysis to diagnose and resolve server-side bugs, enhancing system reliability
- Collaborated in a cross-functional team in an Agile environment, participating in daily stand-ups and sprint planning

Data Science Intern, Mutual of America, New York, NY

Jun 2022 – Jul 2022

- Implemented natural language processing (NLP) algorithms in Python to find correlations to client conversion rate
- Created pipelines in Dataiku DSS to clean and process data, achieving over **90%** data accuracy and reducing data processing time by **30%**

PROJECTS

IMC Prosperity 3

- Developed real-time trading algorithms focused on arbitrage opportunities, risk management, and market making
- Performed statistical analysis on historical price data using Python to devise trading signals
- Utilized Black-Scholes model and numerical methods for real-time option pricing and implied volatility calculations

Sockfish | [GitHub](#)

- Engineered a low-latency chess engine in C++, featuring efficient board representation and move generation
- Optimized graph search algorithms, including iterative deepening and minimax with alpha-beta pruning, achieving a speed up of over **500%** in AI move selection
- Integrated a graphical user interface (GUI) using SFML for an intuitive user experience

UniMart | **AWS Hackathon Winner** | [GitHub](#)

- Launched a campus-exclusive e-commerce platform, promoting sustainability through peer-to-peer item exchange
- Implemented a robust ID card recognition service using AWS Rekognition, AWS S3 and AWS DynamoDB, reducing authentication time by over **70%**
- Leveraged Firebase for secure user authentication and real-time database management for **750+** users

Airlytics | **AWS Hackathon Winner** | [GitHub](#)

- Developed platform visualizing global environmental factors on an interactive map
- Utilized RESTful API fundamentals to fetch real-time air quality and pollution data from **250+** cities
- Implemented scalable and secure data storage using AWS S3 buckets

Cleanr | **Google Hackathon Winner** | [GitHub](#)

- Engineered a campus-wide platform to promote sustainability initiatives in the Lehigh Valley
- Leveraged Firebase Realtime Database to maintain set of events and users
- Used Firebase Authentication tools such as Google Auth to ensure security for **300+** accounts

SKILLS

- **Programming:** C++, Java, Python, SQL, C#, JavaScript ES6+, TypeScript, Rust, CUDA
- **Web & Backend:** Node.js, Firebase, React.js, Next.js, Docker, .NET, AWS S3, MongoDB
- **Systems & Tools:** Linux, Git, Bash, Windows, Jira, Slack

EDUCATION

Lehigh University, Bethlehem, PA

Aug 2021 – May 2025

Bachelor of Science in Computer Science & Mathematics

GPA: 3.96 / 4.0

- **Relevant Courses:** Data Structures & Algorithms, Operating Systems, Databases, Network Security, Programming Languages, Parallel Computing, Systems Software, Advanced Algorithms, Artificial Intelligence
- **Honors:** Summa Cum Laude, Upsilon Pi Epsilon, Tau Mu Lambda, Wilbur Mathematics Prize, Dean's List
- **Extracurriculars:** ACM (President), Mathematics & Statistics Society (Vice President), Chess Club