

## EDUCATION

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### University of Delaware

Newark, DE

*B.S. in Computer Science and B.S. in Applied Mathematics; Cum Laude (GPA: 3.94/4.00)*

Sep. 2020 - May 2024

- Relevant CS Coursework: Grad Machine Learning, Grad Artificial Intelligence, Grad Data Mining, Algorithms
- Relevant Math Coursework: Grad Stochastic Processes, Grad Probability, Grad Combinatorics, Optimization
- Co-Founder and President of the Competitive Programming Club

### Charles University

Prague, Czech Republic

*Financial Mathematics*

Sep. 2019 - May 2020

- Relevant Math Coursework: Linear Algebra (I & II), Mathematical Analysis (I & II), Introduction to Finance

## EXPERIENCE

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### Capital One (Senior Design Project)

Newark, DE

*Software Engineer*

Sep. 2023 - May 2024

- Implemented and trained a random forest classifier for fraud detection hosted on Amazon SageMaker.
- Developed a secure architecture using AWS Lambda for model inference, Amazon API Gateway for handling user API requests, and AWS Shield for API protection.
- Wrote automated tests that simulate DDoS attacks to extensively test AWS Shield features.

### University of Delaware

Newark, DE

*Researcher*

Jun. 2022 - May 2024

- Conducted research in graph theory, focusing on graph properties and their spectral characteristics.
- Developed algorithms to significantly improve the known lower bounds of the independence number of certain graphs.
- Established and validated a lower bound for disconnecting vertex sets in Hamming graphs.

### Amazon

New York, NY

*Software Development Engineer Intern*

Aug. 2022 - Nov. 2022

- Enhanced AWS Glue dashboard with an ETL job metric tracker, improving data monitoring capabilities.
- Developed a data freshness monitoring tool using Apache Spark in Scala, to ensure up-date data in ETL jobs.
- Authored comprehensive documentation to facilitate the adoption of the developed tools by other teams.

### University of Delaware

Newark, DE

*Researcher*

Jun. 2021 - Jun. 2022

- Conducted research in No-slip Billiards, co-authoring 2 research papers that explore the dynamics of billiard systems.
- Developed and implemented algorithms in Python to verify hypotheses and analyze simulations of billiard systems.

## PROJECTS

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### KapperAI

*React.js, Google Cloud*

- Placed top 8 overall hacks at PennApps 2023 (University of Pennsylvania) and won the *Wolfram Research Award*.  
Developed a mobile application that uses a machine learning model to transplant hair onto a user's selfie.

### HoloFlash

*React.js, Unity, Google Cloud, MongoDB*

- Earned first prize for *Best Use of AI in Education* at HenHacks 2024 (University of Delaware). Created an app that turns handwritten notes and lecture recordings into personalized flashcards, viewable in AR using Microsoft HoloLens.

### Ada.ai

*Dart, Flutter, OpenAI API*

- Earned *Best Educational Hack* first prize at HenHacks 2023 (University of Delaware). Created a mobile application that leverages OpenAI's ChatGPT API to provide computer science tutoring.

## SKILLS

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**Languages:** C++, Python, TypeScript, Java, Scala, PL/SQL, C#, Dart, Bash, MATLAB

**Frameworks / Libraries:** Numpy, Pandas, Tensorflow, React.js, Next.js, .NET, Scikit-learn, Apache Spark

**Technologies:** Git, WSL2, AWS, Azure, GitLab, Google Cloud, MongoDB, CockroachDB, OpenAI API