Jan Ahmed

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Education

University of Delaware — Newark, DE
B.S. in Applied Mathematics and B.S. in Computer Science; 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

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

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

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