Ainesh Chatterjee

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Education

University of Maryland (College Park)

Dual BS in Computer Science (Machine Learning+Quantum Information) and Mathematics

December 2025 | GPA: 3.5

University + CS Departmental Honors, Dean's List

- **AI/ML**: Intro to: AI, Data Science, ML, Graduate NLP
- **Math**: Calculus III, Advanced Linear Algebra, Differential Equations, Abstract Algebra, Financial Modeling
- **CS**: Algorithms, Data Structures, Computer Systems, OOP, Programming Languages
- **Stat**: Applied Prob&Stat, Probability Theory

Publications

- *Ipelets for the Convex Polygonal Geometry*, published at SoCG 2024, 2024
- *AgreeMate: Teaching LLMs to Haggle*, published at arXiv, 2024

Projects

CoronaSafe | Team Lead/Developer

- Python/Flutter app for global COVID-19 risk assessment
- Won the 2021 Congressional App Challenge for district MD08
- Analyzed real-time foot traffic and urban density using a novel time-weighted algorithm for predictive accuracy
- Featured as a guest speaker at the US Patent and Trademark Office's 2022 APPLY Yourself event

Resourceful | Team Lead/Developer

- Python/Flutter app that connected underrepresented students to resources using NLP-driven searches
- Won the Best Education Award at the 2022 Blairhacks_5 Hackathon
- Implemented advanced NLP techniques including NLTK, Spacy, and Cosine/Wu-Palmer similarities

Skills

- **Programming & Tools/Tech**: Python, Java, C/C++, Fullstack Development, DevOps, API Design, Git, Docker, CI/CD, Linux, PyTorch, Flask, REST APIs, NumPy, Pandas
- **ML/AI/Data Science**: Un/Supervised Learning, Deep RL, GANs, Statistical Analysis, Data Structures, Algorithms, Data Processing
- **Soft Skills**: Research, Technical Writing, Problem-Solving, Team Leadership

Experience

Johns Hopkins University Applied Physics Laboratory

Computer Science Intern - Interim Security Clearance

Force Projection Sector: KMT Group

May 2024 - Aug 2024 | Laurel, MD

- **Developed** Generative Adversarial Imitation from Observation (GAIfO) agents, outperforming baseline models
- **Authored** literature reviews on GAIfO and Generative AI, shaping project strategies
- **Enhanced** SCRIMMAGE simulation framework with advanced controller functionalities
- **Revamped** GitLab CI pipelines, boosting efficiency by ***25% and improving security***
- **Optimized** core Docker Image, reducing build times by ***50% and increasing memory efficiency by 40%***
- **Led** winning team for the sector-wide Intern Challenge, in developing a prototype secure, non-GPS intra-campus navigation system

University of Maryland MIND Lab

Data Science/ML Research Intern

Breathing Analysis Project

Fall 2023 - Present | College Park, MD

- **Created** a visualization dashboard for mass breath data analysis, and optimized dataset loading by over ***400%***
- **Implemented** supervised learning techniques to enhance breath segmentation accuracy

University of Maryland CMNS

Lead Teaching Assistant

CMSC351H (Algorithms Honors)

Spring 2024 | College Park, MD

- **Co-designed and graded** homeworks, exams, and lecture material for 38 honours students
- **Conducted** weekly office hours, providing personalized guidance on advanced topics

Additional Qualifications

- **Certifications**: Complete Linear Algebra - Udemy; Algorithmic Toolbox - UCSD; Game Theory - Stanford
- **Awards**: National Merit Scholarship; Dean's Scholarship; Eagle Scout; Congressional App Challenge Winner; ISKF Black Belt
- **Languages**: English (Native); Bengali (Native); Hindi (Intermediate); Spanish (Intermediate); French (Beginner)