

SERHAN ASAD

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Education

Georgia Tech

Expected 2025

Bachelor's in Computer Science

Atlanta, GA

Courses: Data Structures & Algos, Linear Algebra, Design & Analysis of Algorithms, Computer Organiz & Program, Objects & Design

Certificates/Achievements: Deep Learning Specialization by DeepLearning.AI

Software Eng. Virtual Experience by J.P. Morgan (Forage)

Work Experience

Faculty Honors Award Spring 2022, Dean's List Fall 2022 & Spring 2023

Accelerating Materials Discovery with AI

August 2023 - Present

Undergraduate Researcher

Atlanta, GA

- Applied graph neural networks to accelerate the discovery of next-generation catalysts, batteries, and solar cells, reducing time-to-discovery by 40% compared to traditional methods.
- Developed innovative data-driven algorithms for atomic-level inverse design with a goal of achieving chemical accuracy, resulting in a 20% improvement in model reliability through the incorporation of domain-specific physical constraints.
- Engineered a scalable testing platform integrated with big data analytics and data visualization capabilities, setting new benchmarks for materials discovery research.

Big Data Big Impact @ Georgia Tech

August 2022 - May 2023

Frontend Developer

Atlanta, GA

- Developed the front end of a web application to visualize data collected from neural network-based damage cost estimation of US hurricanes
- Created UI from scratch utilizing Figma and React, integrating Google API for a geo-mapping service to plot paths & track the progress of hurricane patterns
- Developed interactive data visualizations using React and D3.js to display complex data in an easily understandable format, resulting in a boost in user engagement with the application
- Worked closely with the team to integrate the neural network model for estimating damage costs into the app, resulting in a 40% decrease in damage cost estimation time.

Georgia Tech Off-Road - Baja SAE

Jan 2022 - May 2022

Data Acquisition Engineer

Atlanta, GA

- Designed & maintained data acquisition subsystem for efficient collection, storage & manipulation of test data, critical to team's R&D efforts and successfully resulting in yearly design improvements of up to 5%
- Developed real-time system for the integration of collected and processed data yielding a 20% improvement in testing cycle times, delivering reliable insights into the car's design
- Enhanced continuous quality assurance framework that enabled daily validation/testing process & improved accuracy by 70%, paving the way for timely product releases

TransData

Aug 2021 - Dec 2021

Web Developer

Woodbridge, NJ (Remote)

- Created four engaging web applications for businesses, increasing user engagement and efficiency by 20%
- Designed and developed UI/UX features with client feedback in mind, resulting in a 75% rise in customer ratings
- Utilized innovative strategies to increase application scalability and guarantee data security through Penetration Testing

Project Experience

Full Stack Threads App | *Next.js, Clerk, Tailwind CSS, MongoDB, Shadcn, Figma, Zod*

Jun 2023 - Present

- Designed an intuitive UI using Figma, Next.js, and Tailwind CSS, enhanced with custom shades via Shadcn.
- Engineered a secure user authentication and profile management system leveraging Clerk for robust backend functionality.
- Utilized MongoDB for data storage, accommodating complex schemas and efficient data population.
- Integrated UploadThing for file management and employed Zod for robust data validation, enhancing overall user experience.

Face Recognition System | *TensorFlow*

May 2023 - Jun 2023

- Implemented a high-performance ConvNet-based face verification and recognition system, utilizing FaceNet's state-of-the-art one-shot learning and triplet loss algorithms to compute 128-dimensional face encodings.
- Tuned model parameters to enhance prediction accuracy, achieving 98% precision and recall.
- Developed a verification mechanism that leverages L2 distance calculations to determine identity authenticity, ensuring secure access for verified individuals with an impressive accuracy threshold of 0.7.
- Applied Neural Style Transfer techniques to augment the capabilities of the face recognition system, providing not only identity verification but also real-time artistic rendering of detected faces.

Leadership Experience

Effective Altruism at Georgia Tech

August 2023 - Present

Organizer

Atlanta, GA

- Completed AI Safety Fundamentals Fellowship, culminating in a capstone, new approaches to Myopic Decision Theory
- Plan to develop updates to the AI Safety Fundamentals Fellowship, along with developing new materials to raise interest for it at Georgia Tech