

EDUCATION

- **University of Rochester** Rochester, New York
Bachelor of Science in Computer Science, Minor in Business Management. December 2023

EXPERIENCE

- **Information Technology Department, University of Rochester** Rochester, New York
Full-Stack MERN Developer — Team Lead August 2022 - December 2023
 - Optimized application for performance, slashing load times by 78% and revamping the user interface to boost user satisfaction by 37%.
 - Collaborated with the team to engineer an online reservation system featuring advanced authorization, resulting in 85% user adoption for online reservations.
 - Revitalized search capabilities, bolstering quick item and user queries while enhancing overall user experience.
 - Led a five-member team in enhancing and maintaining LASSO the MERN-stack application; conducted code reviews for team members, tackled technical challenges, and standardized documentation for efficient onboarding.
- **Department of Computer Science, University of Rochester** Rochester, New York
Data Structures & Algorithms Workshop Leader January 2021 - May 2022
 - Led weekly recitations, reinforcing core concepts from lectures and ensuring comprehension.
 - Stimulated interactive group discussions, allowing students to explore diverse solutions to workshop challenges.
 - Offered personalized mentoring and tutoring in areas of Data Structures, Algorithm Analysis, and Java, catering to individual student needs.
 - Initiated extended learning sessions on topics beyond the syllabus, directly influencing an 18% increase in course retention rates.

PROJECTS

- **GPT-Sync Avatar**
Summer 2023 — github.com/3bdrahman/GPT-Sync-Avatar
 - Integrated OpenAI's Whisper API for voice message transcription and ChatGPT API for generating intelligent responses based on transcribed text.
 - Converted text responses generated by ChatGPT API into natural-sounding speech via Microsoft Speech SDK.
 - Utilized Socket.IO library for real-time transmission of viseme and audio data from the back-end to front-end.
 - Devised a real-time lip-sync animation system, utilizing audio cues, morph targets, and intricate interpolation algorithm to achieve natural, expressive mouth movements.
- **Self-driving Car**
Summer 2022 — github.com/3bdrahman/Self-driving-car
 - Employed segment intersection techniques for accurate collision detection with road edges and objects, and incorporated dummy cars to simulate authentic traffic conditions.
 - Architected a layered feed-forward neural network, linking sensor readings directly to the network's inaugural layer while seamlessly integrating an autopilot control feature.
 - Optimized the neural network through parallelization, enabling simultaneous assessment of over 1,000 car instances, and refined outcomes using selective functions based on y-axis progression.
 - Developed a specialized visualizer class on a bespoke canvas, vividly illustrating neural network operations, from inputs and outputs to intricate weight and bias representations.

TECHNICAL SKILLS

- **Languages:** Java, JavaScript, Python.
- **Web Development:** HTML, CSS, React, Redux, Tailwind CSS, Bootstrap.
- **Back-end Technologies:** Node.js, Express, MongoDB.
- **Cloud & APIs:** Azure, Firebase, Whisper API, ChatGPT API.
- **Other Skills:** Version Control, Git, Github, Gitlab, UI/UX Design, Technical Writing.