

## EDUCATION

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

## EXPERIENCE

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- **Information Technology Department, University of Rochester** Rochester, New York  
*Full-Stack MERN Developer — Team Lead* August 2022 - December 2023
  - Led a team of five through the software development life cycle of LASSO, a MERN-stack scheduling and management web application.
  - Activated previously non-functional search component, enabling rapid loaner item and user queries with integrated availability deduction, significantly improving speed and user experience.
  - Reduced application load times by 78% by optimizing home screen queries to show only seven posts per page.
  - Drafted comprehensive technical documentation, facilitating seamless onboarding for joining team members.
  - Revamped user interface, introducing 'dark mode' and user-centric profiles improving user satisfaction by 37%.
  - Developed a new online reservation feature, integrating an updated authorization strategy to ensure secure and partial access, encouraging 85% of users to switch to online reservations.
- **Department of Computer Science, University of Rochester** Rochester, New York  
*Data Structures & Algorithms Workshop Leader* January 2021 - May 2022
  - Conducted weekly recitations for students, effectively reviewing core concepts covered in lectures.
  - Facilitated group discussions to explore alternative solutions to workshop problems.
  - Provided individualized mentorship and tutoring in Data Structures, Analysis of Algorithms, and Java programming to students.
  - Encouraged students to delve into concepts outside the class, contributing to an 18% improvement in course retention rates.

## PROJECTS

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- **GPT-Sync Avatar**  
*Summer 2023 — [github.com/3bdrahman/GPT-Sync-Avatar](https://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](https://github.com/3bdrahman/Self-driving-car)*
  - Utilized segment intersection to achieve precise collision detection with road borders and obstacles, and integrated dummy cars for realistic traffic simulation.
  - Designed a multi-level feed-forward neural network, binding sensor inputs to the network's initial layer and integrating autopilot controls.
  - Optimized network using parallelization for simultaneous scenarios, refining with selective functions based on y-axis progression.
  - Crafted a visualizer class on a dedicated canvas to demonstrate network functions, showcasing inputs, outputs, weights, and biases.
  - Implemented mechanisms to save, destroy, and restore optimal neural network configurations.

## TECHNICAL SKILLS

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- **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.