

Ismam Ferdous

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Education

University of Wisconsin–Madison

B.S. Computer Science and Mathematics

Expected May 2029

Madison, WI

Coursework: CS 300, CS 400, CS 252, STAT 240, MATH 234, MATH 340, CS 240, CS 354

Experience

Waisman Center – Auditory Encoding & Processing Optimization Lab

Undergraduate Research Assistant

Madison, WI

Sep 2026 – Present

- Develop interactive data visualization and tracking tools for electrophysiological and behavioral measures of auditory encoding in cochlear-implant research.
- Contribute Python code to an automated speech recognition system for evaluating speech perception under cochlear-implant simulations and altered auditory encoding.

Niedenthal Emotions Lab

Software Engineer ; Research Assistant

June 2026 – Present

Madison, WI

- Built a real-time video-call platform for social-connection research, allowing participants to converse naturally while researchers subtly modified facial expression and voice cues shown to each partner.
- Developed MediaPipe-based face tracking, mouth-region morphing, Web Audio voice pitch shifting, and participant-specific calibration to improve transformation naturalness and emotion detection across different faces.
- Implemented researcher dashboards, kiosk-locked participant stations, synchronized clean/altered recordings, and CSV telemetry logs to support controlled experiments and post-session analysis.

Heights Philadelphia – Penn Engineering

BLI Instructor, Computer Science

Jun 2026 – Jul 2026

Philadelphia, PA

- Taught intermediate Java, algorithms, physics, and calculus to Philadelphia high school students through project-based instruction. (MIT4America)
- Developed coding curriculum, mentored individual projects, and led guided experimental physics labs.

University of Wisconsin–Madison - IT Help Desk

IT Help Desk Support Specialist

Sep 2025 – Jan 2026

Madison, WI

- Troubleshoot hardware, software, networking, and classroom technology issues across macOS and Windows environments.
- Managed laptop, camera, printing, and AV equipment circulation, reimaging, and maintenance.

LearnSTEM

Student Researcher

Jul 2024 – Jan 2025

Remote

- Implemented classification, regression, generative models, and CNNs in Python/PyTorch for MRI scan analysis and diagnostic prediction.
- Applied linear algebra, probability, and statistics to evaluate and communicate model performance on real-world data.

FLi Sci

Student Data Science Researcher

Oct 2024 – May 2025

Remote

- Applied clustering and regression in R to socioeconomic data, identifying patterns in regional income disparity.
- Conducted statistical analysis and presented research findings to faculty and peers under graduate-level mentorship.

Projects

OffScript

React, TypeScript, Vite, CSS, Web Speech API, Web Audio API, LocalStorage, Node.js, ESLint

- Developed a public speaking practice app with timed prompts, browser mic recording, live transcription, and post-session speech feedback.
- Designed an interactive practice and review flow that analyzes pace, filler words, vocabulary variety, sentence structure, and rhythm to help users improve clarity and confidence.

SeptaScope

Node.js, Express, MapLibre GL, Leaflet, GTFS-Realtime

- Built a real-time SEPTA transit tracker displaying live train positions, delays, service alerts, route filtering, and rider reports.
- Implemented heuristic surge forecasting and interactive mapping with MapLibre/Leaflet.

BudgetWise

SwiftUI, Firebase, Xcode

- Developed a personal finance tracker with expense categorization, monthly summaries, real-time synchronization, and personalized budgeting insights.

Technical Skills

Languages: Python, Java, TypeScript, JavaScript, R, MATLAB, Swift, Kotlin, SQL

Web/App: React, Next.js, Electron, Node.js, SwiftUI, Tailwind CSS, HTML/CSS, WebRTC

Data/ML & Tools: PyTorch, TensorFlow, Scikit-learn, MediaPipe, Computer Vision, Pandas, Git, GitHub, Firebase