

# REHATBIR SINGH

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## EDUCATION

### University of Wisconsin-Madison

BS Computer Science & Data Science (Dean's List) *GPA: 4.0 / 4.0*

Madison, WI, USA

Sep 2024 - May 2027

## EXPERIENCE

### Flux

*Co-founder & Lead Software Engineer*

Madison, WI, USA

Feb 2025 - Present

- Led product development for a personal app startup connecting student entrepreneurs by complementary skills, growing to 70+ MAU through rapid iteration and user feedback
- Made key decisions including adopting card-based profiles to enable future features and switching from Flutter to SwiftUI after validating iOS-dominant market to improve UX and development velocity
- Designed and implemented a semantic matching system using text embeddings, enabling flexible representations of users' skills and experiences

### A1 Masaood LLC

*Software Developer Intern*

Abu Dhabi, United Arab Emirates

May 2025 - Aug 2025

- Built and launched a React/SPFx timesheet tracker for 30+ technicians, saving 1,500+ sheets weekly through SAP-integrated SharePoint
- Assisted development of a legal chatbot using FastAPI, React, and RAG, saving the legal team 8 hrs/wk
- Partnered with the insurance department on an app for vehicle inventory and insurance, handling data modeling and SharePoint API integration

### Data Science for Sustainable Development @ UW-Madison

*Student Developer*

Madison, WI, USA

Sep 2024 - Dec 2024

- Built a statistics dashboard for the open-source Red-CORAL crime visualization project, analyzing 1,200+ data points using React and Firebase
- Designed a modular filtering system using React Reducers, enabling flexible data slicing and real-time geospatial visualization

## PROJECTS

### MindMerge Rust, Tauri, React.js, Iroh, Fish Audio, Gemini API

<https://rehsingh.cv/mindmerge>

Built a decentralized voice-controlled collaborative whiteboard for a 24h hackathon, implementing low-latency peer-to-peer state synchronization. Designed join-code-based swarm discovery using Gossip protocol.

Integrated a voice-to-diagram pipeline generating structured SVG from natural language.

### Path Tracing Renderer C, OpenGL, GLSL

[https://github.com/MysteryCoder456/path\\_tracer\\_c](https://github.com/MysteryCoder456/path_tracer_c)

Developed a Monte Carlo path tracing renderer using C and OpenGL, implementing BSDF-based light transport and adapting a recursive CPU-bound algorithm to an iterative GLSL implementation to support multi-bounce light accumulation on the GPU.

### Blitz Board Python, JavaScript, Flask, PostgreSQL, Redis

<https://blitz.rehsingh.cv>

Built a real-time multiplayer typing game using WebSockets and Redis-backed shared state to synchronize game lobbies across multiple Flask servers. Identified and debugged client desynchronization issues under concurrent updates. Containerized the system using Docker and self-hosted it using Nginx.

## AWARDS

### Honorable Mention in MadData Hackathon

dotData @ UW-Madison

Recognized for building & presenting Wavelength, an app that analyzes Spotify libraries to connect students with similar music tastes using data science techniques and social discovery algorithms.

Feb 2025

### Dean's List

University of Wisconsin-Madison

Recognized on the Dean's List at the University of Wisconsin-Madison for achieving a 4.0 GPA, signifying academic excellence.

Fall 2024 - Fall 2025

## SKILLS

Frontend:	JavaScript/TypeScript, React.js, Tailwind, Swift, SwiftUI
Backend:	Python, Flask, Django, Rust, Axum, Node.js, Next.js
Infrastructure:	Docker, Nginx, Linux, PostgreSQL, MySQL, Firebase