# Ismail Yusuf

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## EDUCATION

**University of Minnesota, College of Science and Engineering** Expected 2028
Bachelor of Science in Computer Science

- **Coursework:** Data Structures and Algorithms I-II, Machine Architecture, Probability and Statistics
- **Organizations:** UMN AI & LeetCode Clubs, MLT Career Prep, Association for Computing Machinery

## TECHNICAL SKILLS

**Programming Languages:** Python, C#, SQL, Java, C++,C, JavaScript, Typescript, OCaml
**Frameworks:** TensorFlow, PyTorch, scikit-learn, NumPy, Pandas, React, RAG, Flask, NextJS, Subabase
**Developer Tools:** Git, Docker, VS Code, Render, Arduino, TeamCity, Linux, AWS Cloud

## WORK EXPERIENCE

**Emerson** Jan 2026 – Present
Software Engineer Co-op | *C#, SQL* Chanhassen, MN

- Developed backend systems for data-intensive manufacturing software at production scale
- Integrated CI/CD pipelines in TeamCity and GitLab for automated build and deployments
- Supported large enterprise codebases, managing releases, and environment promotion
- Designed and maintained SQL schemas and queries for reliable, high-throughput data access
- Applied modular design principles, code reviews, and testing to ensure reliable production systems
- Designed systems with modularity, reliability, and maintainability as core engineering principles

**University of Minnesota** Jan 2026 – May 2026
Undergraduate AI Researcher | *Python, JavaScript* Minneapolis, MN

- Built a vision-language research system that converts traffic camera images into incident logs
- Implemented Python pipelines for ingestion, normalization, and preprocessing of roadway images
- Applied vision-language models with prompt-based reasoning to extract traffic and incident semantics
- Defined JSON output schemas for incident logging, congestion analysis, and visibility assessment
- Exposed stateless FastAPI endpoint for reproducible, low-latency multimodal inference workflows
- Designed modular abstractions and clear interfaces for experimentation and system evolution

## PROJECTS

**LibraryAI** | *NextJs, React, SQL* *First Place @ UMN Leetcode Club's Project Competition*

- Designed a custom LLM pipeline for PDF-grounded Q&A with streaming responses via API endpoints
- Implemented PDF ingestion and retrieval from Supabase Storage, persisting chat history
- Architected the application backend using Next.js and Node.js with secure data access controls
- Integrated the backend with a React frontend for authenticated chat workflows and live text handling

**HueTime Lamp** | *C++, Arduino, SolidWorks* *Presented @ UMN CSE Design Showcase*

- Built a smart ambient lamp on a Raspberry Pi Pico with sensors, a buzzer, and a NeoPixel LED strip
- Programmed real-time lighting and audio feedback for dynamic responses using sensor-driven logic
- Developed modular C++ firmware using pass-by-reference, custom functions, and memory efficiency
- Designed and 3D-printed a custom enclosure using SolidWorks for hardware integration