Ali Endris

(612) 735-5303 | 25aendri@gmail.com | LinkedIn

EDUCATION

University of Minnesota (Twin-Cities) Minneapolis, MN
Bachelor of Science in Computer Engineering Expected June 2028
Awards/Honors: Lions Scholar, Oliveira Scholar, Dean's list
Relevant Coursework: Data Structures and Algorithms, Practice of Database Systems, Differential Equations

TECHNICAL SKILLS

Languages: Python, SQL, C/C++, Java, JavaScript, Assembly
Data & AI: PostgreSQL, data pipelines (ETL), RAG, prompt engineering, NLP, LLMs, statistical analysis, Claude
Frameworks/Tools: Node.js, React, MongoDB, Linux, MATLAB, GitHub

WORK EXPERIENCE

Pfizer Remote
Extern May 2026 – Present
- Built AI-powered document workflows using RAG, prompt engineering, and NLP techniques
- Developed Python automation pipelines for document processing and data extraction
- Applied LLMs and AI-driven analysis to solve real-world document intelligence challenges

Perfection Group Home St. Paul, MN
Home Health Aide (HHA) Jan 2026 – Present
- Provide daily care and assistance to patients, ensuring safety, comfort, and adherence to individualized care plans
- Maintain detailed documentation of patient conditions and care activities while coordinating with healthcare professionals and family members

RESEARCH EXPERIENCE

Multi-Agent Market Simulation Research Algoverse - Online
Researcher Jun 2026 – Present
- Designed a multi-agent market simulation using LLM consumer personas grounded in real microdata (CEX/ACS record-level distributions) rather than demographic labels, reducing stereotype amplification and improving replication fidelity across income strata
- Developed caricature-auditing metrics (individuation, exaggeration) to quantify persona bias against quintile benchmarks, and scaled population-level agents with swarms of small language models (e.g., Qwen3 0.5B) for market forecasting

PROJECTS

Sprout (Arduino, Node.js, React, MongoDB, OpenAI, Clerk)
- Built a full-stack IoT wellness platform that turns real-time soil data into a passive wellness signal for disabled individuals living alone
- Designed a gpt-4o-mini companion delivering personalized emergency guidance from the user's medical profile, live sensor data, and stored chat history
- Built a real-time data pipeline ingesting live sensor readings every 5s into MongoDB, computing running aggregates (current/average/min/max) and a derived "watering urgency" metric surfaced through a live analytics dashboard

PostgreSQL Query Optimizer Modification (PostgreSQL, C, SQL, Linux)
- Modified PostgreSQL 16.0's query optimizer in C to override native cost-based join selection, adding logic to cycle through nested-loop, merge-sort, and hash-join algorithms with randomized switching every 1–3 queries
- Traced the query planner's execution path through a large open-source C codebase to locate and edit join-selection code, then validated behavior at runtime using EXPLAIN and live join queries

PostgreSQL Buffer Replacement Policy (PostgreSQL, C, Linux)
- Replaced PostgreSQL 16.0's native clocksweep/LRU buffer eviction with a custom Top-10 Least-Recently-Used policy in C, maintaining per-buffer timestamps via a global time-unit counter to rank eviction candidates
- Implemented counter-indexed victim selection across the buffer pool, correctly handling edge cases where unpinned candidates fall below the counter value, and instrumented the manager to report candidate timestamps, eviction index, and selected-page free space

LEADERSHIP AND PROFESSIONAL DEVELOPMENT

Management Leadership for Tomorrow Minneapolis, MN
Career Preparation Fellow Jan 2026 – Present
- Accepted into a selective 18-month professional development program that accelerates the career growth of emerging leaders through structured coaching, mentorship, and targeted skill-building
- Engage with leading partner organizations (e.g., LinkedIn, Bloomberg, and Deloitte) to gain industry exposure and insight into tech-talent pathways

Anoka-Ramsey Community College Coon Rapids, MN
Peer Mentor Feb 2024 – May 2024
- Mentored 5 students on academic planning, time management, and organizational skills, building high-trust relationships that improved confidence and retention