Micah McCollum

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EDUCATION

University of Arkansas, Fayetteville Aug 2023 -- Present

B.S. in Computer Science, Minor in Mathematics

- Relevant Courses: Honors Operating Systems, Database Management Systems, Information Retrieval, Computer Networks, Honors Programming Paradigms, Artificial Intelligence, Algorithms
- GPA: 3.91/4.00
- Honors College
- Chancellor's List 3x, Dean's List 2x

University of Arkansas, Pulaski Technical College Aug 2021 -- May 2023

A.S. in Technology & Engineering

- Concentration: Computer Science
- GPA: 4.00/4.00
- Chancellor's List 4x

EXPERIENCE

University of Arkansas, Fayetteville Apr 2025 -- Sep 2025

Research Assistant

Advisor: Professor Susan Gauch

- Conducted research into knowledge graph-based retrieval augmented generation (RAG) for grounding large language models (LLMs) with structured context, as part of my honors thesis.
- Performed literature review in topics like link prediction, knowledge graphs, question answering, and RAG.
- Refactored experimental Python code, which included adding checkpointing to reduce redundancy during data processing.

University of Arkansas, Fayetteville May 2025 -- Jul 2025

Teaching Assistant

Supervisor: Professor Susan Gauch

- Assisted in administering CSCE 20004: Programming Foundations I online course as the teaching assistant to 30+ students.
- Graded weekly C++ programming projects promptly, provided student feedback, supported course logistics, and held office hours.

PROJECTS

Key-Value Store github.com/m-lm/taproot

- Built an in-memory key-value store in C++ with minimal dependencies, supporting data persistence via append-only logs with basic compaction, LZ4 compression, and binary serialization.
- Implemented command-line and client-server interfaces through TCP sockets, user configuration, and build/deployment automation via shell scripts.

- Improved speed of data compression by 21x, file writes by 1.7x, and log compaction by 1.4x over the course of development.

ShakesNet github.com/m-lm/shakesnet

- Created a Python program to generate social networks of characters from all of Shakespeare's 39 plays.
- Weighted the network edges by character co-relation frequencies, incorporating temporal information over the course of each play on a scene-by-scene basis.
- Supports visualization and file export functionality for external network analysis programs such as Gephi.

Minmath github.com/m-lm/minmath

- Developed and deployed a full-stack web app to improve mental math skills, featuring user accounts, leaderboards, personal statistics, gameplay settings, and real-time feedback with a clean minimalist interface for a streamlined experience.
- Built with JavaScript/HTML/CSS on the frontend and Django on the backend. Utilized a Docker container for PostgreSQL during development.

SKILLS

Proficient: Java, Python, JavaScript, HTML/CSS, SQL, Linux, Git
Intermediate: C++, Django
Beginner: Docker, Bash

AWARDS & HONORS

Taft, O'Neal, Geels Scholarship (2x), *University of Arkansas* 2024 – 2026
Published in *Milestones* Academic Journal vol. 17, *Pulaski Technical College* 2022
Math Scholar Award, *Pulaski Technical College* 2022
Outstanding General Chemistry II Student Award, *Pulaski Technical College* 2022

VOLUNTEER ACTIVITIES

Hour of Code 2025, *Code.org* 2025