

# GAVIN HARDY

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## EDUCATION

University of Michigan, Ann Arbor, MI

May 2025

Bachelor of Science in Computer Science

GPA 3.72/4.00

Relevant Coursework: Data Structures and Algorithms, Honors Statistics and Data Analysis, Computer Security, Artificial Intelligence, Quantum Information Science and Engineering, Game Development, Computer Networks

## SKILLS

**Technical Skills:** C Family, Python, Unity, OS, APIs, GitHub, Backend, Frontend, OAuth, React, Machine Learning, Docker

**Languages:** Native English, Intermediate Spanish

## EXPERIENCE

VOID Tech Club, Ann Arbor, MI

August 2024 - Present

Developer

- Collaborated with interdisciplinary teams on a year-long AI Blockchain Startup project
- Leveraged Agile and Scrum methodologies to optimize project workflows
- Developed a high-performance, responsive website using Vite/React, leveraging React Hooks for efficient state management and integrating robust API calls to an established backend system.

FALCON LAKESIDE MANUFACTURING, Stevensville, MI

May 2024 - August 2024

Software & Hardware Intern

- Streamlined software issue resolution in a high-stakes manufacturing environment, ensuring minimal downtime
- Demonstrated proficiency in requirement-gathering through direct supervisor communications
- Enhanced operational efficiency by implementing industry standard solutions tailored to production needs

Meijer, Stevensville, MI

May 2023 - May 2024

Food Night Clerk

- Streamlined nightly restocking operations, maintaining optimal store presentation
- Ensured excellent customer service, addressing inquiries and resolving issues promptly

## PROJECTS

AUTOMOTIVE AIR LEAK DETECTION AUTOMATION

May 2024 - August 2024

- Developed a Python-based, PyQt5 multithreaded application reducing manual testing time by 80%
- Programmed Raspberry Pi with IOBUS, HID barcode scanners, and Google Sheets API integration
- Implemented cross-platform error handling and retry mechanisms for robust performance

APPLICATION SECURITY

October 2024 - November 2024

- Developed buffer overflow and ROP exploits to gain unauthorized root access, bypassing DEP and ASLR
- Utilized GDB and Intel x86\_64 assembly for dynamic analysis and debugging of vulnerable applications
- Enhanced security knowledge by identifying, exploiting, and mitigating control-flow hijacking vulnerabilities within a controlled VM environment

DATABASE IMPLEMENTATION

February 2024 - March 2024

- Developed a full-fledged database system prototype to manage and query data efficiently
- Implemented features including table manipulation, indexing (hash and BST), and join operations
- Designed custom structures for efficient table storage and lookup using C++ STL containers
- Improved understanding of database internals, including indexing mechanisms, query execution, and optimization techniques

## LEADERSHIP & COMMUNITY INVOLVEMENT

CIRCLE K, Ann Arbor, MI

August 2018 - Present

Community Service Member

- Addressed social issues such as homelessness, literacy, and elderly care in the Ann Arbor community
- Strengthened interpersonal skills through volunteering with diverse groups in various service environments