Zachary Wenzel

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[Github](#) / [Linkedin](#)

EDUCATION

University of North Dakota, Grand Forks, ND   **Class of 2023**
Bachelor of Science in Computer Science, *Honors Program*   GPA: 3.6/4.0
Bachelor of Science in Chemistry with Emphasis in Biochemistry, *Honors Program*

WORK EXPERIENCE

Software Engineer, WoundExam Corp. ([SafetySpect](#))   **Fall 2021 - Spring 2022**
- Designed and implemented UI to overlay thermal, metabolic, oxygenation, and blood circulation imaging over feet to analyze multiple conditions that cause foot ulcers using Python and OpenCV
- Integrated camera with Raspberry Pi, allowing programmatic control of camera and modalities
- Discussed with stakeholders and decided software MVP roadmap for the year-long partnership
- MVP received the [Andrew Freeman Reward](#)

ACADEMIC PROJECTS

Operating Systems, Prof. Ronald Marsh - *C, Memory Management, Multithreading*   **Fall 2022**
- Improved performance of file translations by managing 3 detached programs running in parallel with shared memory using mutexes, multithreading, forking, and piping in C
- Analyzed memory management algorithms, CPU utilization and development, disk organization, UNIX links, and file allocation methods

Mathematical Modeling and Simulation, *Prof. David Apostal*   **Fall 2022**
- Programmed and trained a DC-GAN neural network to generate and discriminate between images from various MNIST datasets
- Used a discrete event simulation of a business to determine the optimal decisions to maximize profits

Concurrent and Distributed Systems, Prof. David Apostal - *Java, C++, Multithreading*   **Spring 2022**
- Created a multithreaded matrix multiplication software using C++ and Slurm Workload Manager to compare performance of using varying amounts of GPUs on Talon supercomputer cluster
- Solved Edward Djikstra's Dining Philosophers concurrency problem using mutexes in Java

Artificial Intelligence, Prof. Marina Kim - *Python, AI, Algorithms*   **Spring 2022**
- Programmed a chess engine using Python, implementing minimax and alpha-beta pruning algorithms
- Solved constraint-satisfaction problems such as Einstein's zebra puzzle using backtracking and arc consistency algorithms

Health Information Diffusion by Externalities Research, Prof. Xun Zhu - *R, Twitter API, Big Data*   **Spring 2021**
- Zhu, X., Zhuang, J., & Wenzel, Z. (2021). *Mobilizing Widespread and Rapid Health Information Diffusion by Well-Connected Users: A Message Externality Perspective*
- Analyzed Twitter data of health tweets in relation to message externalities with R, in order to determine the link between message externalities, spread, and speed of health information
- Presented at the International Communication Association in May 2021

OTHER EXPERIENCE

Certified Nursing Assistant, Warroad Senior Living Center   **July 2018 - Oct 2021**
- Managed residents living in WSLC, communicated with nurses to determine care plan

SKILLS

Languages	Python, C, Java, JavaScript, Rust, C++, C#, R, HTML, CSS
Technologies	Flask, React, Github, UML, Figma, Selenium, OpenCV, Tensorflow, Scikit, Spring, AWS, SQL, Linux
Concepts	Automata, Frontend, Backend, Full-Stack, Machine Learning, Artificial Intelligence, Algorithms, User Interface Design, REST APIs, Distributed Programming, Neural Networks