ALEX WANG

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EDUCATION

Case Western Reserve University   **Cleveland, OH**
Bachelor of Science in Computer Science, Software Engineering concentration   *Aug 2021 – May 2025*
- **Cumulative GPA**: 3.81 | **Honors/Awards**: National Merit Finalist (2020), Dean's High Honors (2021-2024)
- **Coursework**: Data Structures and Algorithms, Statistics for Engineering in R, Linear Algebra, Intro to AI, Discrete Mathematics, Computer Networks, Intro to Operating Systems, Programming Language Concepts, Full Stack Web Development
- **Organizations**: University Program Board, Society for Industrial and Applied Mathematics, Hacker Society, Theta Tau

SKILLS

Programming Languages: Python, JavaScript, Java, MATLAB, Scheme, C#, R, Haskell, C/C++
Software Tools: Git, LaTeX, GIMP, Inkscape/Canva, Unity, Microsoft Office Suite, Affinity Photo

RELEVANT PROJECTS

University Budget Sheet Bot | JavaScript | Google Sheets API   *June 2024 – present*
- Engineered an error-resistant data scraping bot to track purchase & revenue items, computing relevant financial statistics in real time
- Maintained aggregated budget information by dynamically generating spreadsheet tables on the Finance committee's master sheet
- Safeguarded sensitive financial information from unauthorized access by automatically changing access based on each user's roles

Scheme Language Interpreter | Scheme/Racket   *Feb 2024 – May 2024*
- Developed a robust interpreter to evaluate parse trees and manage program environments for a Java/C-like programming language
- Exploited tail call optimization to implement variable scoping by properly coding function closures, bindings, and exception handling
- Constructed automated test cases, covering scenarios such as recursion, parameter mismatch, nested function calls, and name masking

Flight Price Predictor | Python | Scikit-learn   *Jan 2024*
- Predicted the price of airline tickets by using hyperparameter tuning to choose the most effective model parameters and architecture
- Achieved an R squared value of 0.8 by optimizing the parameters of the loss function and utilizing train-validation-test splitting
- Performed pre-processing & filtering on raw data to produce a standardized representation of the feature vector for the ML model

Eight Puzzle Solver | Python | Pygame   *Dec 2023 – Jan 2024*
- Created a simple and intuitive GUI, utilizing the A* algorithm to efficiently solve a variant of Noyes P. Chapman's 15-puzzle
- Leveraged Pygame library for UI and program visualization, allowing users to interactively shuffle, solve, and see the puzzle state
- Formulated a heuristic resulting in optimal search with a median search time of 0.04 seconds, considering a maximum of 800 states

WORK EXPERIENCE

Cognizant   **Remote**
Generative AI Externship   *June 2024 – Aug 2024*
- Contributed to a project comparing the accuracies of 3 convolutional neural networks by measuring the rate of false positives
- Applied a parameter-efficient fine-tuning technique to tweak generative models with minimal usage of computational resources
- Gave 6 presentations to externship cohort and mentors, discussing case studies and ideas related to ongoing programming projects

Case Western Reverse University   **Cleveland, OH**
Algorithms Teaching Assistant   *Jan 2024 – May 2024*
- Held weekly office hours and one-on-one appointments for students seeking extra help, raising exam scores by 15 percentage points
- Spearheaded 5 review sessions throughout the semester to boost student understanding of relevant topics before exams and quizzes
- Conducted 20+ mock interviews to demonstrate how to formulate and explain solutions to programming problems effectively

Case Western Reserve University   **Cleveland, OH**
Intro to Programming Teaching Assistant   *Aug 2022 – Jan 2024*
- Tutored 30+ students per week on control flow, data structures, and sorting algorithms to raise exam scores by 20 percentage points
- Designed quiz questions and projects to assess students on algorithmic development, noise reduction, and signal analysis techniques

LEADERSHIP EXPERIENCE

University Program Board   **Cleveland, OH**
Finance Co-Chair   *April 2025 – present*
- Introduced a cost-cutting program to buy items in bulk at the beginning of each purchasing period to reduce annual costs by 20%
- Oversaw the management of $435k+, analyzing previous budget expenditures to effectively allocate resources to 13 subcommittees
- Analyzed financial projections to create new budget system for the following year and presented to a panel of university administrators

Society of Industrial & Applied Mathematics   **Cleveland, OH**
Secretary   *Sep 2022 – May 2023*
- Organized monthly chapters for 20 university students interested in discussing technology and math-related research topics
- Hosted 5+ seminars teaching students technologies such as Python, MATLAB, or LaTeX by developing programming tutorials
- Curated a newsletter to inform the student body about free access to peer-reviewed journals and 10+ research conferences a year