Matthew Berthoud

(608) 609-5500 | mwberthoud@wm.edu

EDUCATION

William & Mary, Williamsburg, VA Exp. May 2025
Bachelor of Science in Computer Science, Second Major: Economics, *GPA – 3.55*
Relevant Coursework: Algorithms (Spring ’23, C++), Computer Organization (Spring ’23, C), Data Structures (Fall ’22, Python), Discrete Structures (Fall ’22, LaTeX)

TECHNICAL SKILLS (in order of proficiency)

Tools: Python (including pandas, matplotlib, scikit-learn), C, SQL, HTML, CSS, JavaScript, (C++ in Spring ‘23)
Software: Proficient in Microsoft Office, Google Suite, experience with Stata, LaTeX, SPSS

WORK EXPERIENCE

Retail Sales Specialist, Wild Birds Unlimited, Madison, WI *July 2019 – Present*

- Showcased product features to customers and discussed implementations to meet their unique needs
- Trained over 15 team members in small business procedure and customer service skills
- Assisted in troubleshooting technical difficulties with new cloud-based POS system

PROJECTS

Deque, Queue, Stack, and Linked List creation and implementation *October 2022*

- Formulated, engineered, and employed Linked List, Deque, Stack, and Queue structures in Python
- Designed over 120 unit-test cases to troubleshoot code
- Solved Towers of Hanoi problem recursively using Stacks
- Formulated compiler component to check for matching delimiters, using Stacks

Tideman, Runoff, and Plurality vote counting algorithms *October 2022*

- Programmed algorithms for intaking and tallying votes, determining election winner of three election types, in C
- Transposed algorithm into Python, with optimizations

Facilitated ranking algorithm *September 2022*

- Designed an algorithm in Python to generate 1 on 1 matchups from a list and store win rates based on user selections, determined user’s preference order based on win rates
- Stored and updated data long-term across many trials, and participants

Sorting algorithm testing *September 2022*

- Compared efficacy of selection and insertion sorting algorithms on arrays with up to 50,000 entries in Python
- Ran code automatically, processed, and visualized data about efficiency of algorithms with matplotlib

Command-Line Chess *April 2021*

- Implemented a simple chess game using Python lists and NumPy arrays, with characters representing tiles and pieces
- Developed into a fully functional 2-player game, playable in a local terminal

LEADERSHIP EXPERIENCE

President, Founder, Our Williamsburg *September 2022 – Present*

- Collaborated with two endorsed student-rights-friendly City Council candidates on City policy goals
- Mobilized bloc of student voters to register in Williamsburg and vote for endorsed candidates
- Delegated tasks within club Executive Board and volunteers in voter outreach efforts
- Canvassed over 100 student rental properties