Marios Kalpakis

mkalpakis1@gmail.com / 301-250-3078

Curious and ambitious Computer Science and Math student seeking a position in quantum computing, distributed systems, computer vision, machine learning, software engineering, optimization, and algorithms research.

SKILLS

Languages: Python, C, R, Java, MIPS and x86 Assembly, Rust, OCaml

Technologies: Git, Redis, Pandas, Linux, OpenCV, Java Swing, JavaFX, MacOS, MS Windows, MS Office, Mediapipe, MatLAB

WORK EXPERIENCE

Univ. of Maryland School of Medicine, Center for Shock, Trauma, Anesthesiology, Baltimore, MD

Research Intern **June 2022 - August 2022**

- Individually developed parallelized Python programs for high performance statistical analysis of vital signs and other associated medical patient data.
- Individually designed multiprocessing framework to distribute computationally heavy tasks across multiple machines, with failure management.
- Resulted in 13x speedup enabling the team of 40 researchers to reduce calculation time from weeks to days/hours, using NumPy, Pandas, Redis, Python Multiprocessing and Multithreading.

L.L. Bean, Rockville MD - Sales Representative **July 2021 - January 2022**

Projects

Efficient, Low-Cost 3-D Motion Tracking System **2022-23**

- Built stereo camera using webcams and Raspberry Pi 4, designed software to concurrently record video, recognize faces, and calculate distance from the camera.
- Used OpenCV, Mediapipe, Python Multiprocessing, local and remote computations.
- Quantitatively analyzed tradeoffs between accuracy, latency, and hardware usage for different subject movement speeds, camera resolutions, and frame rates.

Networked Memory Game **Spring 2022**

- Created Multithreaded Socket Server and Client in Java, where the server can handle multiple clients at once, allowing for disconnect and reconnect at any point.
- Building on the server/client system, created a multiplayer card-based Memory Game in Java Swing, allowing for users to play together from different devices on the same network.
- Built GUI in Java Swing, with animated cards, and multiple different views, with highlighting for selected cards, and interactable stacks. Also implemented a play/restart menu, and win screen.

AVL Tree **Fall 2021**

- Implemented height, left/right rotations, add node, and remove node functions that maintained binary search tree balance in Java, with O(log n) time complexity for basic operations.

EDUCATION

University of Maryland - B.S. Computer Science and Math - 4.0/4.0 GPA **August 2023 - May 2027**

- Honors College - Global Communities Program
- Computer Science Departmental Honors
- Dean's List
- The Honor Society of Phi Kappa Phi
- Relevant coursework: Algorithms, Programming Languages, Computer Systems, Discrete Structures, MATH340/341 Honors: Proof based unified treatment of Multivariable Calculus, Linear Algebra, and Differential Equations.
- ACM and IEEE Computer Society Student Member.

Walter Johnson HS - Highschool Diploma **September 2019 - June 2023**

- 4.0 unweighted (4.82 weighted) GPA, Robotics Club President.