Rishi Barad

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EDUCATION

UNIVERSITY OF MICHIGAN **Ann Arbor, MI**
B.S. Computer Science, B.S. Neuroscience December 2020
Relevant Coursework: GPA: 3.2/4.0
Data Structures & Algorithms, Computer Architecture, Web Systems, Computer Vision, Computer Security

SKILLS

Strong: C/C++, Python, JavaScript (React), SQL
Proficient: Swift, Golang, REST, Neural Networks, Hadoop, Deployment (AWS), Matlab, Git

PROJECTS

Optical Music Recognition
- Implemented a program that, given an image of printed sheet music, can then apply the proper image preprocessing, music symbol extraction using a deep-learning model, and data post-processing to give a final output of an instrumental audio track of the original sheet music.

Instagram Clone
- Developed a REST API with Flask and utilized React to generate a fully functioning Instagram clone
- Built a scalable, interactive web app with client-side dynamic features, such as infinite scroll, navigation history, commenting and liking
- Deployed using Amazon Web Services

MapReduce (Hadoop)
- Implemented the MapReduce programming model in Python to simulate distributed computing of big data by one master and multiple workers
- Utilized threads, processes, and sockets to mimic the concurrent communication between master and worker modules

CPU Cache Simulator
- Developed a cache simulator in *C* to process assembly language instructions, transferring data between cache and memory to optimize program speed
- Allowed cache flexibility to accommodate direct-mapped, set-associative and fully-associative functionalities

Tetrino
- Recreated Tetris, the classic arcade game, in *C++* using an Arduino microcontroller
- Utilized 1D vector rotation formulas to rotate tetrominoes and prevent collisions

EXPERIENCE

Research Assistant, Michigan Medicine *October 2016 – July 2019*
- Conducted a 3-year pilot study examining the impact of Transcranial Direct Current Stimulation (tDCS) on intensive therapy outcomes for people with aphasia under mentorship from Dr. Carol Persad
- Presented results at Harvard College's National Collegiate Research Conference

Sales Intern, Frontier Promotions *April 2016 – August 2016*
- Built brand recognition, increased customer acquisition, and raised brand loyalty for AT&T/DirecTV as well as other Fortune 500 companies and nonprofit organizations

ACTIVITIES

Michigan Hackers - Core iOS Team
- Collaborated with team members to develop the Michigan Hackers app for attendance tracking and event scheduling
- Integrated the backend infrastructure for the PhotoAssassin iOS game with Google's Firebase platform