Michael Nickerson

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4th Year CS student available for full-time positions post spring graduation

Education

University of Massachusetts Lowell, Lowell, MA
Candidate for a Bachelor of Science in Computer Science **Spring 2023**
Minors: Math, Robotics GPA: 3.5
Relevant Coursework: Computing I-IV, Logic Design, Assembly, Computer Architecture, Discrete I-II, Calculus I-III, Probability and Statistics, CS Foundations, Organization of Programming Languages, Statics, Dynamics, Operating Systems, Analysis of Algorithms, Artificial Intelligence, Mobile Robotics II
Activities: ACM, Robotics Club

Skills

Programming Languages: Asm, C, C++, .NET, Python, JavaScript (HTML CSS), NodeJS, React, Sqlite
Operating Systems: Windows, Linux (Ubuntu, CentOS), Mac
Software: Visual Studio/Code, Git, Microsoft suite, Photoshop, Vegas, OpenCV, LaTeX, Elastic Search, MongoDB
Laboratory: Physics 1 Lab, Computing II Lab, Computing III Lab, Assembly Lab

Relevant Projects

DNA Sequence Alignment September 2020

- Made an application in C++ that used the dynamic programming-based Needleman-Wunsch method for finding the optimal sequence alignment and cost.
- Used the doubling method to analyze time complexity based on the hardware I was using.
- Used Valgrind and massif-visualizer to analyze memory usage.
- This was part of a 7-project portfolio for Computing IV – code is private on GitHub for this reason.

Computer Vision-Based Game Bot December 2021

- Wrote a bot in python that uses OpenCV, OCR, Screen Capture, and the Windows API to play Minecraft by reading the debug screen with OCR to get the agent's state and to scan the map surrounding the agent to build a map.
- Used the d*lite search algorithm to do basic 2d pathfinding. I Plan to expand on this with a 3d non-grid-based pathfinding method that considers scanning into the cost of finding a path for my AI class project.
- Used linear algebra to find player inputs to get to a desired position between pathfinding steps.

Mod Updater / Service July 2022

- Wrote a Nodejs webserver to handle updates for a game mod and act as a basic service for game features at the request of community moderators.
- Service lets me update and manage multiple versions of the game.
- Automatically determines which files need to be uploaded/downloaded using a hashing algorithm.
- Used git to keep code manageable and track/revert any breaking changes.

Work Experience

Teradyne, North Reading, MA 2021 January-Now
Software Engineer Co-Op

- Worked on a .NET application that collected source control data from a ClearCase source control system, created ElasticSearch and Kibana instances for storing and viewing data. Wrote a plugin in NodeJS that computed Complexity and Churn metrics and filtered out statistically uninteresting points. Wrote extensive documentation and helped co-workers make a visualizer for the tool in PowerBI.
- Wrote benchmarking scripts in Python to stress test a new Artifact Management system. Gained experience working in an agile environment.

University of Massachusetts Lowell, Lowell, MA 2019-2021
IT Assistant

- Fixed broken computers, updated software, and installed new hardware.
- Used troubleshooting skills to find an issue with a laptop that had an unfinished uninstall of dual boot Linux.