Sudhir Gunaseelan

sudhir_gunaseelan@student.uml.edu | (978) 930-0366 | GitHub: Sudhir848 | LinkedIn: SudhirGunaseelan
https://sudhir848.github.io/My-Personal-Portfolio/

SUMMARY

An aspiring Software Developer with hands-on experience in programming and problem-solving. Developed navigation algorithms for Cozmo Robot using Python and OpenCV, and implemented Checkers and Sokoban game in C++ using SFML. Currently pursuing my Master's in Computer Science at the University of Massachusetts Lowell. Eager to leverage skills in a challenging environment that offers growth and learning opportunities.

EDUCATION

Master of Science: Computer Science (Concentration: Cybersecurity)   **Expected by December 2025**

University of Massachusetts, Lowell (Lowell, MA)

Coursework: Algorithms, Data Communication, Database I, Natural Language Processing, Computer & Network Security I, Malware Analysis, Artificial Intelligence, Fundamentals of Robotics, Computer Architecture and Design, Issues in Computer Crime and Cyber Security.

Bachelor of Science: Computer Science   **September 2021 - August 2024**

University of Massachusetts, Lowell (Lowell, MA)

GPA: 3.41   *Honors:* Cum Laude, Dean's List

Relevant Coursework: Computing IV (Advanced C++ Programming), Object Oriented Programming, Machine Learning, Mobile Robotics, Data Structures, Algorithms, Data Communications, Graphical User Interface Programming, Computer Architecture, Compiler Construction, Operating Systems, Organization of Programming Languages, Foundations of Computer Science, Assembly Language Programming, Discrete Structures, Calculus II, Probability & Statistics.

TECHNICAL SKILLS

Programming Languages: C, C++, HTML5, CSS, Python, and Javascript.
Frameworks/Libraries: SFML, jquery UI, OpenCV, TensorFlow, scikit-learn, numpy, pandas.
Software/Tools: Visual Studio Code, GitHub, Git, Linux, Ubuntu, Putty, Jupyter, Wireshark, WPS Office, MS Word and PowerPoint.
Languages Spoken: English & Tamil.
Soft Skills: Time management, Active Listening, Problem-Solving, Teamwork.

PROJECTS

Programmed with Cozmo Robot in Python using OpenCV tools

University of Massachusetts, Lowell   **January 2024 - April 2024**

- Designed and implemented navigation algorithms based on sensor fusion and environment representation, improving robot's pathfinding accuracy.
- Constructed and tested the operation of a robotic system to perform specified tasks, ensuring reliable task execution.
- Detected different colored blobs/cubes and found the shortest path to the goal (light cube) using RRT algorithm and coordinate transforms, enhancing the robot's efficiency in task completion.
- Implemented a Finite State Machine to drive towards the specified cube marked with AR markers, increasing the robot's precision in target acquisition.
- Applied Monte Carlo localization using a particle filter to estimate the position and orientation of the robot as it moves and senses the environment, improving the robot's navigational accuracy.   GitHub

Checkers Game

University of Massachusetts, Lowell   **March 2023 - April 2023**

- Implemented game logic using C++ and SFML libraries, enabling players to eliminate opponent pieces and

block their movements, resulting in a functional and engaging game.

- Utilized object-oriented programming principles to manage game states, validate moves, and handle piece promotion to kings, resulting in a smooth and interactive user experience with SFML-based graphical interface.

<div align="right">GitHub</div>

Sokoban Game

University of Massachusetts, Lowell   **January 2023 - February 2023**

- Designed game logic for a warehouse-themed puzzle game where the player pushes boxes to designated storage locations, enhancing problem-solving skills.
- Implemented using C++, including player movements, box interactions, and collision detection, and utilized SFML for rendering graphics, resulting in a fully functional and visually appealing game.   GitHub

HOBBIES / INTERESTS

- Solving a 3 x 3 Rubik's cube.
- Playing Badminton.
- Coding.