Bure Siddardha

Roll No.:B23CM1011
Aritificial Intelligence and Data Science
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Education

Degree/Certificate	Institute/Board	CGPA/Percentage	Year
B.Tech. (AI and DS)	Indian Institute of Technology, Jodhpur	6.3	Expected May'27
Senior Secondary (Class 12)	Narayana Junior College, MPC	93.2%	2023
Secondary (Class 10)	Narayana School, AP SSC	100%	2021

Projects

•Chess-Engine *Dec2024*

A classic chess engine with a custom rule-based AI, built with C++ and integrated into an interactive GUI using Qt framework.

- Technologies Used: **C++**, **Qt (Widgets/UI)**, **Object-Oriented Design**, **STL**, **QGridLayout**
- Developed a fully functional chess engine in C++, supporting all standard rules like legal move generation, piece capturing, pawn promotion, check, and checkmate detection.
- Implemented a rule-based AI opponent that prioritizes capturing moves using decision heuristics and legal move validation.
- Built a responsive and modern UI with **Qt QWidgets**
- A 10x10 grid-based chessboard using **QGridLayout** and **QLabel** widgets.
- Text fields and buttons for move input (e.g., from, to) and game controls.
- Dynamic label updates for turn-based logic ("Your Turn", "System is making a move", etc.).

•Hangman Game (Command-Line C Project)

Developed a modular C code base using functions for input parsing, game loop logic, error handling, and drawing the hangman figure base

- Technologies Used: **C · File Handling**, **ASCII Graphics**, **Multi-Mode Game Logic**
- Designed and implemented a robust terminal-based Hangman word guessing game in C, supporting both single-player and two-player modes with interactive game-play and dynamic Ui using ASCII art
- Enabled random word selection from an external dictionary file as well as custom word and hint input, enhancing game-play variability and user engagement.
- Integrated file I/O to load and manage word dictionaries, improving scalability and simplifying content updates. Implemented real-time visual feedback on remaining attempts and guessed letters, leveraging clear-screen terminal rendering for an immersive text-based gaming experience. Achieved high code readability and maintainability with structured programming practices, preparing the foundation for potential GUI extension or web integration.

•Implementation position and force control of a robotic finger

developed a fully functional robotic finger prototype that can move to desired positions and control the force it applies using sensor feedba

- Technologies Used:**SolidWorks CAD for mechanical design**, **servo/DC motors with encoders for actuation**, **force sensors (FSR/strain gauges) for force measurement**, **microcontroller (Arduino/STM32)for control**, **PID and hybrid control algorithms**, **PWM, I2C**.
- System Integration: Integration of mechanical design with actuators and sensors, real-time sensor feedback to microcontroller running control algorithms, actuator command outputs via drivers, power management, and optional PC interface for monitoring/debugging..
- Implemented a closed-loop control system for a robotic finger using position and force sensors, with real-time PID-based control on a microcontroller. Evaluated system accuracy, responsiveness, and stability through position error and force regulation tests under varying conditions.
- highlights for its use in precision grasping and manipulation tasks.

Key Courses Taken

- Pattern Recognition and Machine Learning, Data Structures and Algorithms , Introduction to Computer Science, Probability Statistics and Stochastic Processes, Math for Computing, Foundations of Quantum Information, Principles of Computer Systems

Skills

- **Programming Languages:** Python, C/C++, java
- **Machine Learning:**Pandas, Numpy, Matplotlib, Scikit-learn
- **Tools & Technologies:** Git, GitHub, Google Colab, QT, Version Control, CI/CD, HTML, CSS, Virtualization, shell
- **Soft Skills:** Problem Solving, Team Leadership, Public Speaking, Adaptability

Achievements and Engagements

- **AWS APAC:** I have certified by AWS in solutions Architecture job simulation
- **Accenture:** I have certified by accenture in developer and technology job simulation
- **COURSE:** I GOT GRADE 'A'in pcs-2 subject among all my branch mates in AIDS
- TGT: Core member of TGT dance club
- Volunteered in Varchas and Ignus and prometeo fests