13 Ranjit Vihar, Loharka Road
Amritsar-143001

RAJAT KALIA

rkalia_be21@thapar.edu
+91-6284946210
LinkedIn- Rajat-Kalia

OBJECTIVE

Seeking a dynamic role where I can apply my expertise in product validation, regulatory compliance, certification, performance testing, leadership, and collaboration in a challenging environment.

EDUCATION

Thapar institute of Engineering and Technology 2021 - Present
BE Computer Engineering

PROFESSIONAL EXPERIENCE

Walmart Global Tech | Software Engineer April 2024- June 2024

- Completed the Advanced Software Engineering Job Simulation where I solved difficult technical projects for a variety of teams at Walmart.
- Developed a novel version of a heap data structure in Java for Walmart's shipping department, showcasing strong problem-solving and algorithmic skills.
- Designed a UML class diagram for a data processor, considering different operating modes and database connections.
- Created an entity relationship diagram to design a new database accounting for all requirements provided by Walmart's pet department.

GE Aerospace | *Software Engineer* March 2024- April 2024

- Completed a job simulation where I advised on alternative energy sources for a hypothetical Aerospace team at GE
- Analyzed and compared diverse energy sources for propulsion systems, including cost, energy density, storage requirements, and how they impact design decisions
- Conducted in-depth research on bypass ratio and compression ratio and their impact on turbofan engine design, including fan diameter, noise, installation considerations, material limitations, and emissions implications
- Developed a technical presentation to effectively communicate the limiting factors associated with bypass and compression ratios that helped guide the decision-making for a next-generation propulsion system at GE Aerospace

PROJECT EXPERIENCE

Employee Performance Rating Prediction (Machine learning project)

- Collected diverse employee data from HR databases, performance records, and feedback surveys.
- Cleaned and normalized data to handle inconsistencies and missing values.
- Identified key performance indicators and relevant employee attributes for inclusion in the model.
- Experimented with multiple machines learning algorithms, including linear regression, decision trees, and ensemble methods.
- Implemented the final model using python and relevant libraries (e.g. - Scikit, Pandas).
- Improved accuracy of performance predictions by 20% compared to the previous manual process.

Airport Database Management System

- Created a comprehensive airport database management system using MySQL.
- This solo project involved taking dynamic inputs, storing values in tables, and implementing complex SQL queries for data management and reporting.
- Developed complex SQL queries to retrieve and manipulate data for various operational needs.
- Created views and materialized views to facilitate reporting and analytics.

Unity: Shinobi warrior Game

- Conceptualized and designed game mechanics, levels, and storylines.
- Designed and modeled 3D characters, including the main ninja character and various enemies.
- Utilized Unity as the primary game development engine.
- Conducted extensive playtesting to identify and fix bugs, ensuring a smooth gameplay experience.

Software Engineering Project: FIND MY TUTOR (fully functional and responsive website)

- Developed a comprehensive, fully functional website** from the ground up, incorporating both front-end and back-end technologies.
- Front-end Technologies: - HTML, CSS, and JavaScript: Created a responsive and dynamic user interface.
- VS Code: Utilized for writing and managing code with extensions to enhance productivity.

- Back-end Technologies: - Node.js: Implemented server-side functionality ensuring robust performance and security using JavaScript.
- Development and Testing: -Postman: Used for API testing and ensuring endpoints work correctly.
- Currently also working on some website development projects related to front-end mainly.

Handwritten Text Recognition Project

- Developed an advanced Handwritten Text Recognition system, leveraging machine learning algorithms and neural networks for accurate and efficient text transcription.
- Implemented preprocessing techniques and model optimization to achieve state-of-the-art recognition accuracy.

Real-Time Application based on Computer Vision

- Led the development of a real-time application utilizing computer vision techniques such as object detection.
- Worked on image segmentation, and tracking.
- Implemented advanced algorithms for automated analysis and decision-making.
- contributing to enhanced efficiency and accuracy in various domains.

Robotic Arm - The Soul of Industrial Automation

- Spearheaded a project focused on designing and programming a robotic arm for industrial automation.
- showcasing expertise in robotics
- worked on mechatronics, and control systems and implemented sensors and actuators for precise motion control and integration with industrial processes.

TECHNICAL SKILLS

MULTISIM	VS-CODE	AUTOCAD	UBUNTU
MATLAB	BLENDER	UNITY	JUPYTER
EAGLE	VIKAS SIMULATOR	MYSQL	TINKERCAD
CISCO PACKET TRACER	GNS3	ANDROID STUDIO	DAVINCI

LANGUAGES

HTML	CSS	JavaScript	Bootstrap or React
Node.js	C/C++	SQL (MySQL, Oracle SQL)	Python

PROJECT BASED SKILLS

Circuit Testing and Validation	Real-life 3D Object Modeling	Optimization Techniques	Numerical Analysis
Data Structures and Algorithms (DSA)	Object-Oriented Programming (OOP)	Design and Analysis of Algorithms (DAA)	Computer Vision Applications
Mobile App Development	Operating System Development	Network Programming (Broadcasting)	AI and Machine Learning Projects