SAI PRAKASH PATHURU

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Software Engineer & ML/AI Developer *with hands-on experience in requirements gathering, system design using diagrams, and robust implementation utilizing programming languages and frameworks. Skilled in testing with advanced tools to ensure software integrity and reliability, maintaining and updating legacy systems to enhance functionality without compromising existing operations. Proficient in training deep neural network models, applying cutting-edge AI frameworks to develop innovative solutions.*

SKILL SET

- **Programming & Technical Skills:** *Python, Java, Data Structures & Algorithms, Object-Oriented Programming, AI/ML Algorithms, C++, C, Ruby, JavaScript, HTML, CSS, SQL, Agile, UML, OWASP Principles, Microservices, CI/CD*
- **Frameworks & Tools:** *TensorFlow (Keras), Nvidia CUDA/cuDNN, PyTorch, scikit-learn, pandas, NumPy, Django, Flask, Spring/Spring Boot, ReactJS, ReactNative, Rails, PyTest, JUnit, REST/RESTful APIs, Visual Studio Code, Eclipse, Git/GitHub, AWS EC2, MySQL Workbench, Docker, Oracle VirtualBox, Heroku, Figma*
- **OS & Productivity Tools:** *MacOS, iOS, AndroidOS, WindowsOS, Linux (Ubuntu, Kali), Unix, Microsoft 365*

WORK EXPERIENCE

University of Colorado Colorado Springs *Colorado Springs, USA*
Student IT Manager in DHS *Dec 2023 – Dec 2024*

- **Software Management:** Proactively maintained critical software systems such as CBORD-FoodService Suite, eTransact (POS and Mobile Application) & affiliated software such as Bartender, NetNutrition page to ensure reliable performance and improved user experience by 70%.
- **Automation Development:** Implemented a Python-based mouse automation to reclassify 4,500 items, streamlining data migration between categories, improving efficiency with code success rate of 90%, which helped to reduce manpower by leveraging machine power.
- **Operational Efficiency:** Actively collaborated with directors, managers, and staff across 10 university locations to resolve technical issues, provide training, and improved IT workflows by 70%.
- **Data Optimization:** Enhanced data integrity by resolving duplication issues, filling missing data fields, and eliminating redundancy within a dataset of 4,000 item's records.

EDUCATION

University Of Colorado Colorado Springs *Colorado Springs, USA*
Master of Science in Computer Science *Dec 2024*

Jawaharlal Nehru Technological University *Kakinada, IN*
Bachelor of Technology in Computer Science & Engineering *Nov 2021*

PROJECTS

Visual AI Players for the Game of Go:
- Researched on a new concept, which is AI player for the board game Go, leveraging DQN, CNN, Image in-fill technique, Policy & Value networks to visually analyze the board and make strategic winning moves.
- We wanted to build a part of the bridge that could fill the gap between AI & Humans. However, we ended up creating a dataset that could help us build this project in the future that could lead to potential research papers.

AI Driven IDS:
- Designed an AI-driven IDS using CNN and LSTM algorithms (accuracy: 0.7641/1) trained on a specialized dataset (6.4 GiB) for DoS and malware detection. Tested the system in a VirtualBox environment with sample attacks, demonstrating its ability to identify threats with a success rate of 83%.

Proactive API Compatibility Testing for Mobile Application:
- Researched on a new concept called proactive API compatibility testing, incorporating real-time code monitoring and machine learning to detect issues early, significantly reducing post-development effort and deployment delays.
- My goal was, in this research, to find a way to mitigate the deployment delays.

Weather Above Ground:
- Designed a web application offering personalized trail recommendations with integrated weather forecasts, maps, and sorting options, enhancing user experience with tailored suggestions and preferences.
- In this project we had to go through SDLC, get the requirements from clients, Design, Implement, Test cases & deploy.

Emotion Based Music Player:
- Designed an "Emo Player", a music player leveraging facial recognition and machine learning to classify user emotions and play mood-specific music, integrating OpenCV and SVM (accuracy: 0.7032/1) for real-time performance. Demonstrated it and was successful 8/10 times.

Neighborhood Watch: Designed an SRS document based on the client requirements, covering specific requirements, UML Diagrams.
JabRef: Developed test cases and ran tests such as JUnit, Pit Test Coverage & Pit Mutation (78%), EMMA Test, CodeMR Test (low-medium).