SRI RUPIN POTULA

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EDUCATION

Vellore Institute of Technology — Computer Science and Engineering, *Vellore, Tamil Nadu*
B. Tech *July. 2019 – August. 2023*
CGPA: 8.96 / 10

WORK EXPERIENCE

Hewlett Packard Enterprise, *Bengaluru, Karnataka*
Systems/Software Engineer 1 *January. 2024 – Present.*

- Software Developer with a focus on networking in the HPC Business Unit. Proven expertise in developing high-performance software solutions for HPE's supercomputers, utilizing Python, C++, and Java programming languages.
- Collaborative team player proficient in Scrum methodologies and TCP/IP protocols. Recognized for introducing innovative networking solutions, optimizing supercomputer functionality, and consistently achieving project milestones in High-Performance Computing environments.

BSU Inc, *Remote*
Freelancer *September. 2023 – December. 2023*

- Performed thorough webpage analysis using advanced techniques to identify critical HTML elements and understood intricate web structures.
- Initiated and led the development of a powerful Python Automation Script, employing Python and Selenium to enhance and streamline web interactions, effectively reducing task completion time by 50%.
- Analyzed manual process flows to design a responsive script that seamlessly executed operations such as login procedures, page navigation, and various webpage interactions.
- Successfully executed and optimized the automation script, resulting in a significant 50% reduction in the time required for workflow completion.

Hewlett Packard Enterprise, *Bengaluru, Karnataka*
Research and Development Intern *Jan. 2023 – July. 2023*

- Proficiently navigated a complex codebase using build logs and Makefiles, showcasing a deep understanding of system architecture.
- Applied hierarchical structures and Yocto Project methodologies to streamline code flow, optimizing efficiency in software development.
- Formulated Bitbake recipes for drivers and kernel sourcing, gaining insights into SUSE-based OS booting processes.
- Successfully generated lighter, more efficient images, contributing to improved system performance within an open-source framework.

RESEARCH PUBLICATIONS

An Approach for Lung Cancer Detection using SMOTE with Convolutional Network
MDPI, Completed, Under Review with MDPI *October. 2023 – Present.*

- Led the development of ImageTriNet CNN for lung cancer detection, outperforming VGG16, ResNet50, DenseNet, and InceptionV3. Implemented efficient 256*256 image resizing and utilized SMOTE for data balancing. Achieved equivalent accuracy to benchmark models with a 30% reduction in training time.
- Trained the model with 118 million parameters, optimizing resource utilization by 900%. Results highlight a cutting-edge approach in medical image analysis and lung cancer detection.

Artificial Intelligence-Based Cyber Security Applications
Guide: Dr. Ramani S *August. 2022 – June. 2023*

- Contributed to a chapter in a Springer-published book titled 'Artificial Intelligence and Cyber Security in Industry 4.0.'
- Engaged extensive research on the implementation of Artificial Intelligence techniques, with a focus on Machine Learning and Deep Learning, to fortify cyber security.
- Conducted a thorough analysis of applications in AI, ML, and Deep Learning, involving the curation of algorithms, models, and techniques to ensure comprehensive network safeguarding. Presented a compelling case study illustrating the effectiveness of Machine Learning in detecting and preventing fraudulent activities.

Deepfake Detection: A Modern Survey on Methods and Techniques
Journal of Xi'an University of Architecture and Technology *July. 2021 – Nov. 2021*

- Conducted an extensive survey on cutting-edge deepfake detection techniques, evaluating their effectiveness and accuracy on diverse datasets, thereby contributing to the advancement of the field.
- Reviewed an inventive approach employing Explainable Artificial Intelligence techniques, including LIME and Haar Wavelet Transform, to proficiently identify and interpret deepfake artifacts. This initiative significantly contributed to bolstering transparency and fostering trust within the digital media landscape.

ACADEMIC PROJECTS

Network Intrusion Detection System Using Machine Learning
Technology Used: Python, Scikit-Learn *Jan. 2022 – May. 2022*

- Stacking in Machine Learning was employed to detect network intrusions using the NSL-KDD99 dataset.
- The study involved data preprocessing, classification of multiple attack types, and performance analysis using various metrics.

Emotion Recognition Using Deep Learning
Technology Used: Tensorflow, Python *July. 2022 – Aug. 2022*

- A custom Convolutional Neural Network was designed using Tensorflow for human emotion classification, and its performance was compared to the InceptionV3 model using transfer learning.
- The analysis focused on evaluating the effectiveness of the custom CNN against the pretrained InceptionV3 model on the same dataset.

Metro Shortest Path Finder
Technology Used: C++ *July. 2020 – Nov. 2020*

- Coded a menu-driven C++ program for efficient navigation in Bangalore Metro, enabling users to find the shortest distance between any two stations.
- Implemented BFS and Dijkstra's algorithm to provide a comprehensive list of connecting stations and available routes for accurate station information.

CERTIFICATIONS

- Convolutional Neural Networks in Tensorflow
- Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning
- Introduction to Git and GitHub
- Convolutional Neural Networks
- Problem Solving (Basic) Certificate
- Problem Solving (Intermediate) Certificate

EXTRA CURRICULAR

Toastmasters International, *SOL, VIT*
Member *June. 2020 – September. 2021*

- As a dedicated member at Toastmasters International, I have excelled in delivering speeches within my Pathways 'Innovative Planning,' demonstrating a strong commitment to effective communication and active participation in various roles during sessions.

SKILLS

Programming Languages: Python, C++, Java, C.
Web Development: HTML, CSS, JavaScript, SQL.
Machine Learning: Scikit-Learn.
Deep Learning: Tensorflow, Keras, Computer Vision.
Frameworks: Selenium, Yocto Project, Git, GitHub.
Scripting: Python, Makefile.
Operating System: Linux, SLES, SUSE.