Lakshmi Gayathri Rangaraju

Graduate student at Clemson University

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Education

Masters in Computer Science - 3.92/4 *August 2022 - May 2024*

Clemson University Clemson, USA

Course Work: Foundations of Software Engineering, **Machine Learning**, Data Mining, **Deep Learning in computer vision**, Cloud Computing Architecture, **Statistical Methods**, Applied Data Science, System Admin and Security, **Machine learning - Implementation and Evaluation**.

Technical Skills

Programming Languages	C, Cpp, Java, **Python**.
Libraries	NumPy, Pandas, **PyTorch**, Sci-kit Learn, Matplotlib, Seaborn.
Backend/Testing Frameworks	Spring, Dagger, JUnit, Mockito.
Cloud Technologies	**Amazon Web Services** - SQS, Lambda, SNS, EC2, CloudFormation.
Platforms	Windows, Linux.
Certifications	Business English (BEC) at vantage level by Cambridge, Google Cloud Computing Foundations, Blockchain Architecture Design and Use Cases, **Deep learning specialization**.

Relevant Experience

Graduate Research Assistant *September 2022 - Present*

Clemson University Clemson, USA

- Collaborated with Dr. Da Li, Assistant Professor in Civil Engineering department to improve the existing search engine. The improved search engine **increased** the effectiveness of the search process by **30%** providing as it allowed users to apply filters to their search results.
- Currently working with Dr. Adam Hoover from Electrical Engineering department to develop a mobile and watch application. The applications collect the sensor data to help users to track the intake of number of kilo calories.
- **Technologies** involved in these projects are - **Machine Learning**, Plotty- Dash, Python, Android development, Java.

Reseach Intern *January 2020 - May 2020*

Genoparadigm Hyderabad, India

- Helped radiologists in determining if the patient has breast cancer by constructed a deep learning model which detects the presence of lesions in mammogram images.
- Technologies involved in this project are – **Deep learning**, Python, Numpy, Pandas.

Other Experience

Software Development Engineer *August 2021 - July 2022*

Amazon Hyderabad, India

- **Boosted** the privacy compliance of a service by **10%**, by developing well designed and tested code for back end.
- Devised good quality test cases which **improved** backward compatibility and the API workflow by **30%** during an internal service framework migration.
- **Raised the Operational Excellence bar** of my team by identifying root causes for issues in our services and by taking future action items to reduce the recurrence of the same issue, and by reviewing peer's code.
- **Improved** developer productivity by **20%** by implementing an automated notification system to ping service on-calls about paged messages. And strategically migrated off the legacy system.
- **Contributed** to Engineering Excellence by automating the process of copy pasting the configurations from one service environment to another, which **improved** developer productivity by **20%** while creating new service environments.
- **Technologies** involved in these projects are – Java, Spring, Dagger, AWS, Junit, Mockito, Git.

Software Development Intern *January 2021 - August 2021*

Amazon Hyderabad, India

- Reduced the manual effort of collecting basic information of issues from clients by **40%** by automating the process through a new, efficient, and well-tested Model-View-Container (MVC) application.
- **Technologies** involved in this project are – React, Java, Spring, Git, Junit, Mockito.

Publications

[1] Subramanian Rajasekaran, **R. Lakshmi Gayathri**, Jain Priyal, Kanneganti, Sai Rohith. "Automatic Breast Cancer Lesion Detection and Classification in Mammograms Using Faster R-CNN Deep Learning Network , *issues and Developments in Medicine and Medical Research Vol. 6*, February 2022, Page 10-20. [Link]

[2] Subramanian Rajasekaran, **R. Lakshmi Gayathri**, Jain Priyal, Kanneganti, Sai Rohith. "Breast Cancer Lesion Detection and Classification in Radiology Images using Deep Learning, *European Journal of Molecular and Clinical Medicine, 2020, Volume 7, Issue 3*, Pages 677-684. [Link]

Projects

Face Mask Detection

Developed a YOLO-based deep learning model utilizing TensorFlow to detect face masks, enhancing public safety in pandemic situations. Applied expertise in surveillance technology for real-time monitoring and compliance. July 2020

Driver Drowsiness Monitoring System

Developed a CNN + LSTM-based deep learning model for real-time analysis of driver behavior in video data, implementing an effective drowsiness detection system. Enhanced road safety by proactively alerting drowsy drivers, mitigating the risk of accidents. May 2021

Quality Evaluation of Skull Stripped Brain MRI Images

Developed an innovative tool leveraging deep learning (CNN) to automate quality assessment of skull-stripped brain MRI images, minimizing human intervention. Significantly enhanced efficiency and accuracy by **30%** in image evaluation within a medical imaging context. January, 2023 - May, 2023

Determining early readmission of diabetes patients within 30 days of discharge

Engineered a cutting-edge tool using deep learning (CNN) to determine if a diabetic patient gets readmitted within thirty days of discharge. Integrating these findings into clinical workflows, will optimize patient care and elevates healthcare standards with improved treatment outcomes. August, 2023 - December, 2023