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.
Web Development	HTML, CSS, Bootstrap, React, Plotty Dash, **SQL.**
Tools	Github, **Microsoft Powerpoint**, **Microsoft Excel.**
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

- **Optimized** Search Engine with Dr. Da Li, Assistant Professor, Civil Engineering Department. Achieved a **remarkable 30%** increase in search process effectiveness by implementing optimizations. Introduced innovative features allowing users to apply filters to their search results, optimizing the user experience.
- **End-to-End Development** of Android Applications with Dr. Adam Hoover, Electrical Engineering Department. **Solely responsible** for building the entire code base for mobile and watch Android applications. The applications leverage sensor data to enable users to seamlessly track their kilocalorie intake.
- **Technologies** - Machine Learning, Plotty - Dash, Python, Android development, Java.
- **Skills** - Agile Methodologies, Cross-disciplinary Collaboration, Collaborative Problem-Solving, Algorithm Design.

Reseach Intern *January 2020 - May 2020*

Genoparadigm Hyderabad, India

- Collaborated with radiologists to facilitate breast cancer diagnosis by developing a sophisticated deep learning model for lesion detection in mammogram images.
- **Technologies** – **Deep learning**, Python, Numpy, Pandas.
- **Skills** - Collaborative work, Innovation.

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 groundbreaking **YOLO-based deep learning model** using TensorFlow to detect face masks, significantly impacting public safety during pandemic situations. The implementation of this technology not only enhanced safety measures but also demonstrated a commitment to innovation and technological advancements. July 2020

Driver Drowsiness Monitoring System

Engineered a cutting-edge **CNN + LSTM-based deep learning model** dedicated to real-time analysis of driver behavior in video data. Spearheaded the creation of an impactful drowsiness detection system, contributing significantly to enhanced road safety. May 2021

Quality Evaluation of Skull Stripped Brain MRI Images

Engineered a groundbreaking tool employing deep learning (CNN) for the automated quality assessment of skull-stripped brain MRI images, revolutionizing the medical imaging landscape. Successfully reduced human intervention by implementing an innovative approach, leading to a **30%** improvement in efficiency and accuracy during image evaluation. January, 2023 - May, 2023

Determining early readmission of diabetes patients within 30 days of discharge

Developed an advanced tool employing deep learning (CNN) to predict readmission within thirty days for diabetic patients post-discharge. Integrating these findings into clinical workflows, will optimize patient care and elevates healthcare standards with improved treatment outcomes. August, 2023 - December, 2023

Other Experience

Software Development Engineer

August 2021 - July 2022

Amazon Hyderabad, India

- **Enhanced** privacy compliance of a service by **10%** through meticulous development and rigorous testing of robust backend code, aligning with industry standards.
- **Improved** backward compatibility and API workflow efficiency by an **30%** during an internal service framework migration. Created high-quality test cases to ensure robustness and seamless integration.
- **Elevated** team **operational excellence** by diagnosing root causes for service issues, implementing preventive measures, and conducting thorough code reviews. Actively contributed to creating a resilient and reliable system.
- Led the **design and implementation** of a comprehensive automated notification system from scratch, significantly increasing developer productivity by **20%**. Performed **high-level design** to ensure system scalability and maintainability. Successfully migrated from legacy systems to streamline processes.
- **Automated** the configuration transfer process between service environments, improving development speed by **20%**. Contributed significantly to the creation of new service environments while adhering to best practices.
- **Technologies** – Java, Spring, Dagger, AWS, Junit, Mockito, Git.
- **Skills** - Meticulous design, Identifying root causes, Preventive measures implementation, Code review, High-level design, Developer productivity improvement, Adherence to best practices.

Software Development Intern

January 2021 - August 2021

Amazon Hyderabad, India

- **Championed** the development of an efficient Model-View-Controller (MVC) application, **leveraging design principles** to achieve a remarkable **40%** reduction in manual effort for gathering essential issue information from clients.
- **Technologies** – **React**, Java, Spring, Git, Junit, Mockito.
- **Skills** - Leadership in application development, Design principles application, Efficient application design, Problem solving, Achievement of a significant reduction in manual effort.