Ramya Bygari

rbygari2@illinois.edu | ramyabygari.github.io | LinkedIn

Education

University Of Illinois Urbana Champaign (UIUC) Champaign, Illinois
Master Of Science, Computer Science (Thesis with Prof. Indranil Gupta on Distributed Systems for GNNs) *2022 - 2024*

National Institute of Technology Karnataka (NITK) Surathkal, India
Bachelor of Technology in Computer Science *2016 - 2020*

Experience

Razorpay | Machine Learning Engineer Aug 2020 - Jul 2022

- Smart Routing : Migrated and transformed the existing rule-based batch processing system to a scalable stream processing ML Random Forest system to intelligently handle real-time payment transactions using Spark and Kafka. Increased payment success-rate by 6% thereby decreasing product gap and enhancing user engagement.
- Deployed distributed batch processing self-serve pipelines to provide a reliable and high throughput user personalization infrastructure/schema for seamless data analysis and data modeling. Developed data pipelines leveraging Hadoop sharded file system for efficient extraction and processing of terabytes of data, Elastic Search and Scala for data storage and ETL pipelines respectively. Decreased the user data serve latency by 50%, from 600 ms to 300 ms.

Adobe Systems | Product Intern May 2019 - July 2019

- Developed a C++ plugin to support platform-independent, variable frame-rate animation and low latency export through Lottie, an open-source JSON-based animation file. Reduced the animation export time by 60% (5 mins to 2 mins).

PathCheck, MIT Media Lab SpinOff | Research Collaborator Aug 2021 - Present

- Deployed a rapid fact-checking search engine, to curb the spread of misinformation that collates data from various sources, checks for authenticity, and concisely summarizes the reliable articles. (covid-news.org)

Chennai Mathematical Institute | Research Intern May 2018 - July 2018

- Implemented an end-end deep learning system using Keras and Tensorflow to estimate the damage of an agricultural field by segmentation of the weed from the main crop. Deployed over 300 farms in collaboration with Skylark Drones.

Selected Projects

Implementation of ECN+ for ns-3 | Project Link Oct 2018 - July 2019

- Implemented ECN+ for ns-3 in C++, an extension of ECN, used to signal the sender about congestion in a network.

Breast Cancer Treatment Planning | Project Link Jan 2019 - Oct 2020

- Developed an ML system using Tensorflow and Keras with a customized loss function to handle dataset imbalance and proposed a modified LadderNet architecture for intermediate segmentation. Achieved an overall accuracy of 91.2%.

Operating Systems Simulator Nov 2017 - Dec 2017

- Developed a web application that simulates various functions of an Operating System such as process disk scheduling, page replacement and semaphores. Built using the Django web framework and uses Python for backend calculations.

Publications

- An AI-powered Smart Routing Solution for Payment Systems | IEEE Big Data Conference Paper
- Blindness (Diabetic Retinopathy) Severity Scale Detection | IEEE SDS Conference Paper
- Prostate Cancer Grading using Multistage Deep Neural Networks | Springer MIND 2021 Conference Paper
- Automated Molecular Subtyping of Breast Carcinoma using LadderNet Architecture | | IEEE-JTEHM Journal

Technical Skills

Languages: Python, Scala, C/C++, Java, CUDA, JavaScript, GO
Web Technologies: MySQL, Flask, MongoDB, React
Tools: Docker, Kafka, AWS, Airflow, Hadoop, ElasticSearch, Apache Spark, PySpark, Tensorflow, Keras, Pytorch, Github

Leadership / Extracurricular

- Speaker at Open Data Science Conference (ODSC) APAC 2021
- Mentor and Workshop coordinator at Grace Hopper Conference (GHC) 2021
- Teaching Assistant: Data Science Discovery

Coursework

Graduate : Distributed Systems, Independent Study/Research on distributed systems for GNNs
Undergraduate (Selected) : Advanced Database Systems, Machine Learning, Data Mining, Big Data, Computer Networks