Naga Srimouli Borusu

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Technical Skills

Languages: Python, Java, C++, C

Technologies/Frameworks: Docker, Kafka, Spring-boot, Pytorch, Tensorflow

Education

Birla Institute of Technology and Sciences, Pilani **Rajasthan, India**
Master of Technology, Data Science Engineering, 9.77 SGPA, 8.74 CGPA *2019 – 2021*

Indian School of Business, Hyderabad **Telangana, India**
Technology Entrepreneurship Program, 96% *2016 – 2018*

Osmania University, Hyderabad **Telangana, India**
Bachelor of Engineering, Electrical and Electronics Engineering, 8.29 CGPA *2014 – 2018*

Experience

Senior Research & Development Engineer **February 2023 – Present**
Amelia *Bengaluru, India*

- Lead and conduct research in areas of Natural Language Processing, Speech processing, etc., designing scientific approaches and architectures to develop Amelia - the most human AI with advanced NLP capabilities
- Mentor and guide junior developers in NLP and Speech Processing, and develop and maintain Java/Python-based applications and tools to enhance Amelia's NLP technology.
- Analyze and evaluate the performance of Amelia's NLP models and algorithms, and provide recommendations for improvements to achieve the most human-like NLP technology.
- Collaborate with team members, stakeholders, and external partners to achieve research and development goals while staying up-to-date with industry trends and best practices in NLP and Speech Processing, to continuously enhance Amelia's NLP technology and advance its human-like capabilities.
- Implement CI/CD pipelines for model deployment and implement automated monitoring utilities to monitor the deployed ML models for data drift.

Senior Software Engineer, Development **July 2018 – February 2023**
Netcracker Technology *Hyderabad, India*

- Worked as an Individual Contributor and Subject Matter Expert in the R&D team, developing new features to be added to the product and maintaining them.
- Developed utilities for time-consuming tasks involved in billing operations, which reduced the data validation time during refund estimations on customer bills by around 28% per bill cycle resulting in saving 4MDs of manual effort involved per month which translates to saving more than 350+ hours yearly saving about a million Euros
- Developed machine learning models to analyze customer buying patterns which helped in predicting the next best products customer might be willing to purchase and it helped in the reduction of customer attrition rate by 15% and has increased the overall revenue per month by 35%.
- Implemented CI/CD pipelines for model deployment and implemented automated monitoring utilities to monitor the deployed ML models for data drift.
- Awarded "**Start Performer**" award for exceptional contributions to the product development

Deep Learning Researcher **August 2021 - June 2022**
Indian Institute of Science *Bangalore, India*

- Working under the guidance of Dr. S. N. Omkar, Chief Research Scientist, Computational Intelligence lab Aeronautics Dept., IISc Bangalore
- Developing computer vision algorithms using Generative Adversarial Networks and Probabilistic Graphical models to be used in Super resolution of images

Data science and Marketing Research Intern **June 2015,2016**
Indian Institute of Management *Lucknow, India*

- Worked under the guidance of Prof. Sameer Mathur. focused on Statistics and Econometrics.
- Analysed business cases published in Harvard Business Review and analysed various strategies statistically
- Developed statistically promising strategies that could increase customer engagement
- Analysed various marketing strategies of fortune 500 companies viz., market selection, market entry and exit etc.
- Developed B-Plans to market FMCG products in newer markets analysing the customer interests and buying patterns

Awards & Achievements

- Awarded **"Star Performer"** for being in the top 1% workforce out of 200+ team at Netcracker Technology for exceptional contributions to the project
- Won **1st prize** at **NIT Warangal** in 2016, **2nd** at **IIT Hyderabad** in 2017 and received a **Merit certificate** at **IIIT Hyderabad** in 2017 for presenting a Paper on **"Piezo Electric Energy Production and Harvesting on Ships"**
- Won **3rd prize** at **NIT Warangal** in 2015 and received a **Merit Certificate** from **IIIT Hyderabad** in 2016 for presenting a paper on **"Wireless Power Transmission Using Solar Powered Satellites"**
- **Best Outgoing Science Student** & **Best Outgoing Science and Maths Secretary** at St. Gabriels H S, WGL for the year 2011-12

Projects

Emotion Tagging in Audio Signal using Weakly Supervised Learning | *Python - Pytorch | M.Tech Thesis*

- The project aims at detecting human emotions Angry, Happy, Surprise, Disgust, Neutral, Fear, Sad associated with audio signal.
- The project employs Auto Encoder and CNN architecture.
- Datasets SAVEE, RAVDEES, CREMA-D and TESS were used.

Chatterbox | *Spring, AngularJS, Typescript, MongoDB, Kafka, Docker*

- The application allows to communicate with instant messages across communities, individual users.
- Developed a full-stack web application using Spring boot serving a REST API with Angular as the frontend.
- Used Kafka as message broker to handle the users and conversations. Used MongoDB as a database.

Deep fake video generator | *Python - Pytorch*

- The work is based on implementing the research papers "First order Motion for Image Animation" and "Motion Representations for Articulated Animation".
- Given an input video and static image the algorithm can generate deep fake video of the person in the static image based on the input video.
- Reconstruction loss was used as loss function to train the data to achieve acceptable accuracy.

Image Captioning | *Python - Pytorch, nltk*

- The application is designed using pre trained VGG16 network, Resnet50 networks for the encoder and used GRUs for Decoder to generate the image captions.
- Flickr 8K dataset was used to perform the task.

Bloxorz Game playing Agent | *Python*

- The levels of the game are configurable and graph algorithms BFS, DFS, A* search are implemented to solve the puzzle.
- The automatic game playing agent takes care of the board dimensions, avoids the traps and reaches the end of the level in optimised steps as per the algorithm chosen.

Design of Smart grid using Neural Networks | *Python, C++*

- Intelligent Electrical devices are connected to the electrical appliances in the building and all these IEDs are connected to a central server.
- Developed a framework to monitor the electrical usage across all the rooms in the buildings.
- Developed deep learning algorithms to optimise the power consumption by switching the loads between the power grid and solar panels.

Leadership / Extracurricular

- **Organiser/Member** of Book Club, Python Community, Celebrations Committee team at Netcracker Technology
- **Campus Ambassador** for Technology Entrepreneurship Program , ISB, Gachibowli, Hyderabad
- **Lead Coordinator** and VFX designer of THEME BALLET (college dance troop)
- **Lead Coordinator** for college technical fest ACUMEN 2018
- **Editor-In- Chief** of Electtrico Rivista (the departmental magazine of EEE) from 2016-2018
- **Website** and **Graphic designer**, **Co-organiser** for the annual college technical fest ACUMEN from 2016-2018

Hobbies

Designing using Photoshop & Illustrator - Logo Designing - Reading Blogs - Reading Research Papers - Cooking - Playing Badminton - Reading Books