



# Naga Srimouli Borusu

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## Technical Skills

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**Languages:** Python, C++, C

**Technologies/Frameworks:** Docker, Kafka, Hadoop, Hive, Renaissance, Spark, Pytorch, Tensorflow

## Education

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**Birla Institute of Technology and Sciences, Pilani**

**2019 – 2021**

*Master of Technology, Data Science Engineering, 9.77 SGPA, 8.74 CGPA*

*Rajasthan, India*

**Indian School of Business, Hyderabad**

**2016 – 2018**

*Technology Entrepreneurship Program, 96%*

*Telangana, India*

**Osmania University, Hyderabad**

**2014 – 2018**

*Bachelor of Engineering, Electrical and Electronics Engineering, 8.29 CGPA*

*Telangana, India*

## Experience

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**Senior Software Engineer, Development**

**July 2018 – Present**

*Netcracker Technology*

*Hyderabad, India*

- Working with both Agile and Waterfall/SDLC methodologies, I've been involved in writing scalable, reusable and efficient APIs.
- Write the design documents for new custom enhancement request based on the specifications provided by the client/business analyst, work on R&D for the need in developing new features to be included in the product.
- 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 analyse customer buying patterns which helped in predicting the next best products customer might be willing to purchase and it helped in 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.
- I'm a Subject Matter Expert for critical components of the product
- 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

## Projects

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**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.

### Generate Graph Embeddings | *Python - networkx*

- The work is based on the research papers “Node2vec” and “Multi-Scale Attributed Node Embedding”.
- The application was tested on FIFA data set and Karate club data set to identify the embedding of the nodes and identify the similarity between them.

### 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.

## Awards & Achievements

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- 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

## Leadership / Extracurricular

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- **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

## Relevant Coursework

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|---|--|---|
| • Deep Learning                         | • Machine Learning                         | • Statistics and Numerical Methods            |
| • Data Structures and Algorithm design  | • Artificial Computational Intelligence    | • Probabilistic Graphical Models              |
| • Discrete and Non-discrete Mathematics | • Big data and Stream Processing Analytics | • Computer Architecture and Operating Systems |

## Hobbies

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