




KRISHNAV RAJBANGSHI

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EXPERIENCE

Artificial Intelligence Institute at University of South Carolina (AIISC) Sept 2022 – Present

AI Research Intern | *Natural Language Processing, Large Language Models*

- Developed a novel language model, which enhances traditional distributional models by incorporating more linguistic information to the model to understand the **syntactic structures of language**.
- Successfully trained the model in an unsupervised manner, demonstrating a strong understanding of popular language model training techniques and their application to NLP.
- Proposed a novel approach to **language modeling**, taking into account syntactic information, which has the potential to enhance the performance of language models.
- Currently preparing a **research paper** for publication in a peer-reviewed journal.

Machine Intelligence and Bio-Motion Research Lab May 2022 – Aug 2022


Research Intern | *Deep Learning, Time Series Data, Feature Extraction*

- Worked under **Dr. Anup Nandy, Assistant Professor, Computer Science and Engineering, NIT-R.**
- Explored **3D Human Gesture Data** captured by kinect, extracted features and developed a good performing model for **Human Gesture Recognition**.

EDUCATION

National Institute of Technology (NIT), Silchar Dec 2020 – Present (expected 2024)
B.Tech in Computer Science and Engineering CGPA : 8.46 / 10 (As of 5th Sem)

KEY PROJECTS

RoadMent | Segmentation of Roads from Satellite Images  Jan 2022 – Feb 2022
Image Segmentation, Deep Learning, Image Processing

- An end-to-end project based on **Image Segmentation**. A website was developed, where if a user uploads a satellite image the model will segment out the roads from the images.
- The **U-Net architecture** was used for our model and it was a group project. My role was to handle the data, build the model and fine tune it accordingly.
- Model performance was based on IoU score and the loss was Dice-Coefficient loss. Training IoU score was 0.497 and validation IoU score was 0.415.
- **2nd Best Project** from East Zone in Anveshan National Student Research Convention 2021-2022. Presented the project in Anveshan representing Nit Silchar.

Clean/Dirty Road Classifier | Detection of Clean/Dirty Road  Oct – 2021
Transfer Learning, Computer Vision, Web Scraping

- Project based on **ConvNets** and **Transfer Learning**, used to identify whether a road is clean or dirty. **MobileNet** was used as our base architecture and the weights are based on imagenet
- **Web Scraping** techniques were used to download images of both clean and dirty roads from the internet.
- A training accuracy of 97.1% and validation accuracy of 91.6% was achieved.

ACHIEVEMENTS

- 2022** **2nd Best Project East Zone** | *Anveshan National Student Research Convention 2022*
Presented the project RoadMent representing NIT Silchar. Won the best project amongst all the participants from various colleges of India.
- 2021** **Rank 2 – Data Strata** | *Annual Data Science Hackathon Nit Silchar*
Analyzed and presented insights about the Public 2020 Stack Overflow Developer Survey Dataset

RESPONSIBILITIES

Computer Science Society NITS

- **ML Wing Head**

Nov 2022 – Mar 2023

- **ML Wing Member**

Nov 2021 – Oct 2022

Took part in all the activities related to the Computer Science Society of NITS, arranged various ML events and guided the junior members of the wing.

Machine Learning Club NITS

- **Moderator**

Oct 2021 – Present

Handled all the club activities and arranged workshops and ML classes. Created a whole new culture of ML in college.

CERTIFICATIONS

Deep Learning Specialization

Nov – 2021

Andrew NG, Coursera

Fundamentals of Deep Learning

Sep – 2021

NVIDIA

TECHNICAL SKILLS AND INTERESTS

Programming

Python, C++, C

Machine Learning

TensorFlow, PyTorch, Hugging Face

Interests

NLP, Computer Vision, Application of Machine Learning in Geo-sciences and Remote Sensing, Deep Learning in Space Sciences, Generative Models, LLMs