

My name is Sakshi Suman. I am currently enrolled as a Graduate student in the **Applied Mathematics** program at **Northeastern University**, Boston. I will be graduating by December 2022.

I earned my bachelor's degree in Computer Science from the "REVA University (2015 - 2019)". After spending a couple of years learning the basics of Computer Science and Machine Learning, in my pre-final year I got an opportunity at ISRO (Indian Space Research Organization) for field exposure to further enhance my academics. I completed my project on remote sensing and hyperspectral imagery under the guidance of subject matter expertise, Professor Dr. [Mallikarjun M Kodabagi](#). The project was to classify urban areas using hyperspectral imaging. During this process, we used Tensorflow, a popular deep learning library, and Convolutional Neural Network (CNN) to classify datasets. Using this, we studied and compared the effects of multiple activation functions on classification results. The impact that hyperspectral imagery can make in various domains is the reason why I decided to further explore this field. In my final year, under the guidance of Prof. [K Anita](#), I led a team of 4 to complete a project on Crowdsourced Solar Power Generation Optimization using Hyperspectral Imaging. This model focused on detecting footprints of buildings from hyperspectral satellite images and suggest through mathematical calculations how crowdsourced power generation is efficient as compared to the existing methodology. I also presented a [research paper](#) on Classification of land cover using Data Analytics for Hyperspectral Imaging in the International Conference on Advances in Computing & Information Technology (IACIT 2019), which was also published in the University Grants Commission (UGC) Indexed and Approved Journal: International Journal of Computer Sciences and Engineering. During my last semester I interned at a company named Walkter Beacon Lab Pvt. Ltd. My work involved development of an application tracking system (ATS) using Natural Language Processing principles. Post this I have an overall work experience of 2+ years as a Software Engineer – Machine Learning, and my work involved problem-solving in the areas of Computer Vision, Machine Learning at Pelatro Solutions Pvt. Ltd.

I chose to pursue master's to enhance my knowledge in the field of Machine Learning. I am currently taking the bottom-up approach to understand the advanced math concepts behind every Machine Learning Algorithm. I am interested in the "Machine Learning Research" internship opportunities for Summer - 2022.

My coursework (**Active/Upcoming**) includes the following courses:

<ul style="list-style-type: none">• MATH 5131 – Mathematical Methods and Modeling• MATH 5110 – Applied Linear Algebra• MATH 7241 – Probability I	<ul style="list-style-type: none">• CS 6140 – Machine Learning• CS 5330 – Pattern Recognition and Computer Vision• MATH 7343 – Applied Statistics• MATH 7233 – Graph Theory• MATH 7203 – Numerical Analysis
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I recently came across NETFLIX – Research Computer Vision blog and was intrigued by the project "Character-focused Video Thumbnail Retrieval". I interpret this problem as an application of Transfer Learning. In the presentation I could see that the team used VGG CNN to extract features from images (probably from dataset such as ImageNet). Instead, we could try to solve this problem using State-of-the-art CNNs such as ResNet or DenseNet. This would solve the problem of Vanishing Gradients and also improve the accuracy metric which in this case is mAP/ROC-AUC. I am also interested to get myself involved in other projects related to Computer Vision at NETFLIX. I also have experience working with sequence/time-series data and is interested in projects in Natural Language Processing.

Thank you for your time!

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