



KARTIK SHARMA

Course : **M.Sc. (Hons.)**, Economics and **B.E. (Hons.)**, Computer Science, 2023

Email : f20180789@pilani.bits-pilani.ac.in

Mobile : 9425601494

CGPA : 8.68



ACADEMIC DETAILS

COURSE	SPECIALIZATION	INSTITUTE/COLLEGE	BOARD/UNIVERSITY	SCORE	YEAR
CLASS XII	SCIENCE	Mansarovar Public School, Bhopal	CBSE	94.2 %	2018
CLASS X		Delhi Public School, Bhopal	CBSE	10 CGPA	2016

Subjects / Electives	Linear Algebra, Machine Learning, C Programming, Econometrics, Database Systems, Probability and Statistics, Neural Network and Fuzzy Logic, Object-Oriented Programming, Data Structures and Algorithms
Technical Proficiency	Python3, Deep Learning, C Programming, C++, Tensorflow, Machine Learning, PyTorch, SQL Programming, Java

SUMMER INTERNSHIP / WORK EXPERIENCE

Research Intern, Samsung Research Bangalore (SRI-B)	May 2022 - Present
<ul style="list-style-type: none"> Working on scalability and robustness of transformer based multi-label classification problem for predicting the action in an image. (Example: A dog is playing with a ball) 	
Summer Intern, Kizora Software Private Ltd	Jun 2020 - Jul 2020
Designed a microservice (Geo Solution Service Hub) using Flask Framework (Python) with the following functionalities: <ul style="list-style-type: none"> Calculate the distance between any two locations on a map and get the fastest route according to the mode of travel using Google Maps API. Maintaining SQL database of searched routes to save API calls. 	

PROJECTS

Instance segmentation framework to detect weapons in X-Ray Scans - Computer Vision	Jan 2022 - Present
Project Supervisor - Dr. Dhiraj Sangwan <ul style="list-style-type: none"> Developed an instance segmentation framework to recognize highly cluttered instances of contraband items during baggage security checks. Constructed an unsupervised anomaly detection framework using encoder-decoder architecture. Plan on improving the performance by deploying a more adaptive attention mechanism using a 3D object detection approach. 	
Multivariate time series analysis to predict the crop yield - Deep Learning	Jul 2021 - Present
Project Supervisor: Dr. Poonam Goyal <ul style="list-style-type: none"> Conducting a multivariate time series analysis on the multi-spectral Landsat and Sentinel data to predict the crop yield in different areas. Experimenting with different deep learning architectures (including CNN and LSTMs), trained on dimensionally reduced data (treating images as a histogram of pixel count). Incorporating a Gaussian Process to model the Spatio-temporal structure of the given data. 	
Wake-up Word Detection - Deep Learning	Jul 2021 - Jul 2021
<ul style="list-style-type: none"> Constructed a speech dataset from synthesized data and implemented a trigger word detection model with over 90% accuracy. Trained a GRU(Gated Recurrent Units) to detect when someone has finished saying the word "activate". 	
Car Detection with YOLO - Deep Learning	Jun 2021 - Jun 2021
<ul style="list-style-type: none"> Implemented object detection on a car dataset using the very powerful YOLO model. Used the pre-trained YOLO Model for image classification and stacked non-max suppression using IOU Grid analysis to accurately make bounding boxes around detected cars. 	
Art Generation with Neural Style Transfer - Deep Learning	Jun 2021 - Jun 2021
<ul style="list-style-type: none"> Used transfer learning on the VGG-19 network to generate new artistic images. Implemented a cost function that minimizes the content and style cost by running both the images through the pre-trained VGG-19 model. 	

AWARDS AND RECOGNITIONS

Amazon ML Challenge (Hackathon) Amazon India	Aug 2021
<ul style="list-style-type: none"> Placed in Top 50 among participating 3500 teams in creating ML model to accurately (67% accuracy) assign Product IDs to a large dataset of amazon products. 	
ML Summer School Amazon India	Jul 2021
<ul style="list-style-type: none"> Shortlisted for Amazon Machine Learning Summer School, an integrated learning program to make students industry-ready. An ML and Coding-based selection test was conducted for only 20 selected Institutes of India. 	
Technothon'15 IIT Guwahati	Oct 2015
<ul style="list-style-type: none"> Technothon is an international school championship conducted by IIT Guwahati with the participation of over 12000 students. Secured All India Rank 31 in prelims and 4th rank in Mains conducted at IIT Guwahati Campus among the top 50 teams that were invited. 	

VOLUNTEER EXPERIENCE

National Service Scheme, Bits Pilani - Role: Volunteer Cause: Social Services	Aug 2018 - May 2020
<ul style="list-style-type: none"> Volunteered in Health and Public Awareness Department. Volunteered in Blood Donation Camps, Eye Donation Camp, and various Health camps in Pilani. Delivered Lectures in Village Schools on various awareness topics. 	