KSHITIJ PARIKH

Final Year

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Education

Indian Institute of Technology, Jodhpur **July 2019 – May 2023**
B.Tech in Computer Science and Engineering, CGPA ***8.30/10*** *Jodhpur, Rajasthan*

Bright VIP School **June 2017 – May 2019**
Higher Secondary Education, GSEB, Percentage: ***88.77 %*** *Vadodara, Gujarat*

Bright Ambalal School **May 2017**
Secondary Education, GSEB, Percentage: ***89.86 %*** *Vadodara, Gujarat*

Research Experience/Projects

Semantic Enhanced Sketch Based Image Retrieval System | *Dr. Anand Mishra — IIT Jodhpur* **January 2022 - Present**

- Researching on novel ways to use **sketch and text for image retrieval** from large database systems.
- **Created a database** for the problem statement using Visual Genome and Google Quick Draw.
- Modified SOTA sketch based image retrieval models (**DeepSBIR, Doodle2Search**) and SOTA text based image retrieval models (**ViLBERT**) and tested on our dataset.
- Currently developing 4 novel models : *a) Single encoder multimodal transformer (MMT) b) Object Localization MMT c) MMT with Classification and Object Detection Loss d) 2 Step model using CLIP as backbone.* Model b, c and d already outperform previous SOTA. Now focussing on devising new experiments to test the limits of the models.

Automatic Speaker Verification and Spoofing Counter Measures | *Dr. Richa Singh — IIT Jodhpur* **June - July 2021**

- Analysed the SOTA Machine Learning algorithms for **audio forgery detection**.
- Worked on implementation of different **TTS models** for generating audio deepfake to be used for training dataset for **detection model**. Worked with **Tacotron 2** to generate an end-to-end text to speech model for generating audio spoofs.
- Obtained expereince on working with **NVIDIA DGX2.**

Multi class Image Classification on the CIFAR-10 | *Dr. Richa Singh — IIT Jodhpur* **March - May 2021**

- Successfully implemented an **end to end pipeline** of **various ML algorithms** such as **SVM, MLP, Random Forest** all using Sklearn, CNN using Tensor Flows with and without **dimensionality reduction using PCA** and analysis of various different aspects using Pandas and Numpy in Python.

Binary class Image Classification for a Mask data set | *Dr. Richa Singh — IIT Jodhpur* **March - May 2021**

- Used **OpenCV** and successfully implemented an end to end pipeline of various ML algorithms such as SVM, MLP, Random Forest all using Sklearn, CNN using Tensor Flows with and without dimensionality reduction using PCA and analysis of various different aspects using Pandas and Numpy in Python.

Timetable Management App | *Dr. Sumit Kalra — IIT Jodhpur* **March - May 2021**

- Created a **dynamic website** to **manage** different events and **sort** them to **attend maximum** events in available time using HTML, CSS, Javascript and Django. Implemented different features focusing on **ISO Quality Attributes** Functional Suitability and Performance Efficiency and used **waterfall model** as SDLC.
- Technologies - HTML, CSS, Javascript, Django

Technical Skills

Programming Languages: Python, C, C++, , SQL, Java,
Libraries: Pytorch, Tensorflow, Numpy, Sklearn, OpenCV, Matplotlib, Pandas
Technologies/Frameworks: GitHub, CUDA, Docker, Kubernetes, MATLAB, Simulink, Xilinx, Solidworks
Develoment: HTML5, CSS3, JavaScript, Bootstrap, Android Studio
OthersCompetitive Programming, Problem Solving,

Relevant Coursework

- Real Analysis and Multi Variable Calculus
- Linear Algebra and Ordinary Differential Equation
- Probability, Statistics and Stochastic Process
- Maths for Computing
- Pattern Recognition and Machine Learning
- Natural Language Processing
- Computer Vision
- Deep Learning
- Dependable AI
- Optimization for Machine Learning
- Machine Learning for Big Data

Teaching Experience

- Teaching Assistant of course CSL3080 Computer Network taught to 3rd and 4th year Bachelor students. Responsibilities involved conducting quizzes/class test, checking papers and conducting labs.

Academic Achievements

- Teaching Assistant of course Computer Network5th Rank in Computer Vision hackathon conducted by Prithvi.AI for object localisation of defects in silk clothes.
- 5th Rank in Computer Vision hackathon conducted by Prithvi.AI for object localisation of defects in silk clothes.
- Secured Global Rank 62 among 30,000 others in Codeforces April 2021 Long Challenge
- Secured **AIR-2998** in JEE Advanced 2019 out of 2 lakh students
- Secured **AIR-1777** in JEE Mains 2019 out of 10 lakh students
- Qualified for RMO Gujarat 2017 and 2018
- Cleared first round of INChO 2018 and INAO 2018
- Excellent performance at East Africa Round 2014 in Nairobi, Kenya and Global Junior Round 2014 in Singapore
- Qualified for the final round of **World Scholar's Cup** Tournament of Championship 2014 at Yale University, Connecticut.
- Pursued **French** as second language during secondary school from Grade 6 to Grade 9

Leadership / Extracurricular

Rotaract Club **Jan 2020 – March 2020**

Core Team Member *Indian Institute of Technology, Jodhpur*

- Helped organised **Blood Donation Drive** and raise Awareness.

Ignus, Marketing Team **Jan 2020 – Feb 2020**

Core Team Member *Indian Institute of Technology, Jodhpur*

- As a 2 member brought sponsorship of net amount of **Rs.1,15,000** for college's cultural fest where around Rs.10,000 was the team average.
- As a 2 member made **cold calls** to more than **50 possible sponsors** for college's cultural fest and visited more than 20 possible sponsors

Alumni and Industry Day **Jan 2020 – Jan 2020**

Personal Escort *Indian Institute of Technology, Jodhpur*

- Performed my duty as the **personal escort** for a whole day to Commander Pradeep Prasad who served the Indian Navy for 21 years and is current Governing Council Member IIT Almuni Centre