

# Kartik Narayan

Computer Science and Engineering | IIT Jodhpur  
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## EDUCATION

### B.TECH IN CSE

IIT JODHPUR | 2019-2023  
Department Rank - 2  
CGPA: 8.92 (till 6<sup>th</sup> sem)

### SENIOR SECONDARY

Sri Chaitanya College of Education | 2019  
Percentage: 86%

### SECONDARY

DAV Public School, Pune | 2017  
CGPA: 10.00

## LINKS

Github// [Kartik-3004](#)  
LinkedIn// [KartikNarayan](#)  
Google Scholar// [Kartik](#)

## SKILLS

### PROGRAMMING:

Proficient: C • C++ • Python

Familiar: JavaScript

### DEVELOPMENT:

HTML • CSS • React.js  
• Node.js • Bootstrap • Firebase  
• MongoDB • ReactNative

### LIBRARIES:

Sklearn • Numpy • Pandas  
Tensorflow • Keras • PyTorch  
OpenCV • Matplotlib • Seaborn

### OTHERS:

Windows/Linux/MacOSX  
• Git and Tools • MATLAB  
Google Colab • Jupyter Notebook  
• Adobe Illustrator • Adobe Photoshop  
• Docker • AWS

## COURSEWORK

- Pattern Recognition & Machine Learning
- Data Structures and Algorithms
- Probability, Statistics & Stochastic Processes
- Calculus
- Linear Algebra & Differential Equations
- Deep Learning
- Computer Vision
- Operating Systems
- Database Management Systems
- Human Machine Interaction
- Design and Analysis of Algorithms
- Computer Architecture
- Principles of Programming Languages
- Software Engineering
- Maths for Computing

## PROFESSIONAL DUTIES

- **Teaching Assistant** | Pattern Recognition & Machine Learning | 2021
- **Teaching Assistant** | Introduction to Machine Learning | 2022
- **Reviewer** | IEEE Access
- **Reviewer** | NeurIPS Dataset Track 2022

## EXPERIENCE

### AKTIE TECHNOLOGIES PVT. LTD.

SEPT 2020 - OCT 2020 | DEVELOPER INTERN | DEPLOYED AT PLAYSTORE

- Designed and Developed a completely anonymous and secure end to end encrypted chat platform using **ReactNative**, **Node.js** & **Firestore** that has helped **500+ users** in dealing with their mental health problems.
- The App has **100+ downloads** and **4.7 star** rating on PlayStore.

### UNIVERSITY OF TEXAS, SAN ANTONIO

FEB 2021 - OCT 2021 | RESEARCH INTERN | [DR.HEENA RATHORE](#)

- Designed a **ML model** for prediction of COVID-19 cases and developed a **heuristic model** to **predict lockdown period** which will help government shape the policies.
- Used **L-BFGS-B** for optimization and **SIR differential equations** for curve fitting.

### CSE DEPARTMENT, IIT JODHPUR

MAY 2022 - JULY 2022 | RESEARCH INTERN | [PROF. MAYANK VATSA](#)

- Created DeepFake datasets with real videos scraped from Youtube.
- Implemented the idea of phylogeny in deepfakes and generated 30GBs of data along with 500GBs of traditional deepfake data.

## PROJECTS

### DESI: DEEPFAKE SOURCE IDENTIFIER FOR SOCIAL MEDIA

MAY 2021 - MARCH 2022 | MINISTRY OF HOME AFFAIRS | [WEBSITE](#)

[PROF. RICHA SINGH](#), [PROF. MAYANK VATSA](#) & [DR. SUMAN KUNDU](#)

- Finding the **source of viral deepfake content** on Twitter platform by **temporal data filtering** and predicting its virality using **regression analysis**.
- Technologies used: **Numpy**, **Pandas**, **Sklearn**, **PyTorch**, **OpenCV**

### ESTIMATION OF CURIOSITY-DRIVEN HUMAN CROWD

SEPT 2021 - NOV 2021 | ANIRBAN DAS | [DR.SUCHETANA CHAKRABORTY](#)

- Implemented **Machine Learning algorithms** to predict the size of human crowd taking CSI and sensor values as input parameters. Obtained an **accuracy of >90%**.
- Technologies used: **Numpy**, **Pandas**, **Sklearn**.

### NATURAL IMAGE CLASSIFIER

MACHINE LEARNING COURSE PROJECT | [PROF. RICHA SINGH](#), IITJ

APRIL 2021 - MAY 2021 | OPEN SOURCED [GITHUB](#)

- Graded the **highest amongst 115 students** and the accuracy obtained was ranked **top 100 globally**. Increased the accuracy from 66% to **82%** using **Data Augmentation** on the **CIFAR-10 dataset**.
- Implemented **sequential model** from **tensorflow keras** and **randomForestClassifier** from **sklearn** to train the model.

## PUBLICATIONS

- Anirban Das, **Kartik Narayan**, Suchetana Chakraborty, **Leveraging ambient sensing for the estimation of curiosity-driven human crowd**, 2022 IEEE International Systems Conference (SysCon).
- **Kartik Narayan\***, Harsh Agarwal\*, Surbhi Mittal, Kartik Thakral, Suman Kundu, Mayank Vatsa, Richa Singh, **DeSI: Deepfake Source Identifier for Social Media**, Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition 2022.
- **Kartik Narayan**, Harsh Agarwal, Kartik Thakral, Surbhi Mittal, Suman Kundu, Mayank Vatsa, Richa Singh, **DeePhy: On DeepFake Phylogeny**, International Joint Conference on Biometrics (IJCB - 2022).
- **Kartik Narayan**, Heena Rathore, Faycal Znidi, **Using Epidemic Modelling, Machine Learning and Control Feedback Strategy for Policy Management of COVID-19**, IEEE Access.

## POSITION OF RESPONSIBILITY

- **Internship Head**, CSE at CDC, IITJ | July-2021 - May-2022
- **Head of Technical Events**, Prometeo, Technical Festival of IIT Jodhpur | 2021 - 2022
- **Student Guide** at Student Wellbeing Committee, IITJ | 2020 - present
- **Secretary** of PHEME - The IITJ Newsletter | May 2020 - July 2021