# UPES at EIC/ePIC

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# Know Our Student: *Subhangi Sati & Purvika Joshi*

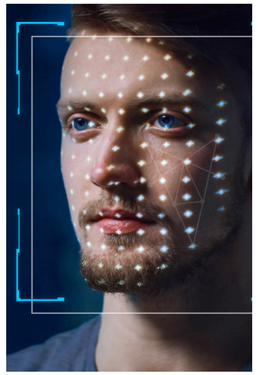
[GitHub Link]

[GitHub Link]

- Doing BS with specialization in AI ML, completed 3rd year
- Technical Proficiency:
  - Machine learning, Data analytics, Digital marketing, Web development, Python, C++, Java, Git, GitHub ..
- Project Portfolio:

**SACH-AI: A COMPREHENSIVE FRAMEWORK FOR DEEPFAKE DETECTION IN AUDIO, VIDEO AND IMAGE USING DEEP NEURAL NETWORKS**

In the video domain, Eulerian Video Magnification and ResNext were utilized for feature extraction, with LSTM for classification. In the audio domain, Mel Spectrogram coupled with CNNs was employed. In the image domain, the DenseNet121 pre-trained model was fine-tuned on the custom dataset.



**CLASSIFICATION OF GEMSTONES USING TRANSFER LEARNING AND MOBILENETV2**

Utilized MobileNetV2 for gemstone image classification, employing TensorFlow and Keras for preprocessing, augmentation, fine-tuning, and modeling.

# Know Our Student: *Abhishek Joshi & Hassan*

- Doing BS with specialization in AI ML, completed 3rd year
- Technical Proficiency:
  - PyTorch, Linux, Git, GitHub, Bootstrap, React, C, C++, Java, Python, HTML, CSS, JavaScript, SQL ..
- Project Portfolio:

**SummaEase: Speech and Text Summarizer | Python, BERT, StreamLit, Git**
Currently in the development of an innovative project leveraging BERT and a real-time speech and text summarization LLM model
Applying cutting-edge technologies and using StreamLit to create a robust and user-friendly platform for seamless communication and information synthesis

GitHub Link

- Doing BS with specialization in DevOps, completed 3rd year
- Technical Proficiency:
  - C++, Java, Docker, Kubernetes, Jenkins, JavaScirpt, Node.js, Express.js ..

**SmartHomeHub (July 2023 – ongoing)**

- **SmartHomeHub is an IoT-based home automation system that centralizes controland monitoring of various smart devices within a household.**
- **It aims to enhance convenience, energy efficiency, and security by allowing users to manage devices like lights, thermostats, security cameras, and appliances through a centralized platform accessible via a mobile app ora web interface.**

GitHub Link

# Our experience with BelleDIRAC ☞ useful for EIC/ePIC

- We have a good command over BelleDIRAC software development
  - DIRAC (Distributed Infrastructure with Remote Agent Control) interware is a Grid solution that exploits distributed heterogeneous resources
  - UPES is one of the top contributor in the development of Distributed Computing infrastructure (GRID facility and BelleDIRAC software)
  - In 2023, two of my students Manikantan Srinivasan and Neel Adwani got selected for MS CS/PhD CS respectively at the North Eastern University (Boston) and New Jersey Institute of Technology
  - In 2024, my student Aarushi has been selected for MS CS at University of Southern California, Arizona State University and North Eastern University
- If EIC decides to go with DIRAC “the vanilla version”: we are good to go
- If EIC decides to go with PanDA for Workload Management in combination with Rucio for Distributed Data Management: we are already using Rucio as a part of BelleDIRAC and we can easily adapt with PanDA for Workload Management
- In future, I also plan to establish an EIC GRID computing facility at UPES, based on my experience with the installation and operations of the Belle II GRID computing facility at UPES