# ANSHUL PATEL

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## EDUCATION

**Nirma University** 2016 - 2020
Bachelor of Technology Information Technology
CGPA: 8.57/10.0
Relevant Courses: Machine Learning, Deep Learning, Probability Statistics and Numerical Analysis, Software Engineering, Design and Analysis of Algorithms

## PUBLICATION

**IFSC : A Database for Indian Folk Songs Classification**
Advances in Intelligent Systems and Computing, Springer Singapore
The paper was presented in the 25th International Symposium on Frontiers of Research in Speech and Music (FRSM 2020), jointly organized by National Institute of Technology, Silchar, India, during 8–9 October 2020. (Link)

## EXPERIENCE

**Cloudoffis Technologies LLP**, *Associate Engineer*, Gujarat, India May 2020 - Current
- Automated the process of extracting relevant data from SMSF documents, yielding up to 80% reduction of work time per document.
- Transformed classification model using Active Learning techniques to detect and sustain both concept drift and data drift to adapt new documents as they turn up.
- Implemented dynamic multiprocessing in the pipeline, achieving a reduction in process time by 30%.

**Knowarth Technologies Pvt. Ltd.**, *Machine Learning Intern*, Gujarat, India Jan. 2020 - May 2020
- Developed a multi-class classification model using Ensemble techniques for 1000+ unstructured SMSF documents distributed over 30 classes, attaining over 95% accuracy.
- Orchestrated the migration of the REST-based APIs to a cloud-based distributed system using AWS SQS and S3 Buckets.
- Evaluated different Object Detection architectures namely YOLOv3, YOLOv4, RetinaNet, CascadeNet, and Detectron 2 to identify borderless tables and cells with a custom dataset.

*Project Intern*, Gujarat, India May 2019 - June 2019
- Spearheaded a proof of concept model for extracting page location of keywords from Australian SMSF documents.
- Implemented a Flask Restplus API with Swagger UI connected to MySQL Database to track down details of the uploaded file along with its status and results.

**Speech Research Group, Nirma University**, *Research Assistant*, Gujarat, India Jan. 2019 - May 2020
- Worked on Speech Processing and Audio Analysis Research Projects using techniques from Machine Learning and Deep Learning under the guidance of Professor Sapan Mankad.

## SKILLS

**PROGRAMMING LANGUAGES:** Python, Java, C, C++, Android, SQL
**DATA SCIENCE & MACHINE LEARNING:** Computer Vision, Natural Language Processing, Data Visualization, Audio Analysis, Statistical Modelling, Predictive Analysis, Multivariate Time Series, Cluster Analysis, Exploratory Data Analysis
**SOFTWARE & TOOLS:** Android Studio, Tableau, Google Colabatory, Git, Wordpress, Google Dialogflow, Heroku, Postman
**DATABASE:** MySQL, SQLite, Firebase, AWS SQS and S3 Buckets, MongoDB
**FRAMEWORK & LIBRARIES:** Pandas, Numpy, Keras, Tensorflow, Rasa, Flask, OpenCV

## PROJECTS

BOTAnshul Oct. 2020 - Dec. 2020
- Redesigned the future of employer-employee interaction in form of a personalized chatbot resume using python's open-source library Rasa.
- Deployed the mini version of me on a personal website using Heroku docker services, making conversations available 24×7 and accessible from any part of the world.

Speaker Diarization July 2019 - Dec. 2019
- Investigated state-of-art methods and speech processing techniques used in preexisting Speaker Diarization systems to identify the number of speakers and segmenting their respective speech time in conversational audio signals.
- Devised a novel framework and developed a model on features extracted from 'The ICSI Meeting' and 'The AMI' corpus using pyAudioAnalysis for segmentation and Hierarchical clustering for recognizing speakers.

Slytherin Game using Genetic Algorithm July 2019 - Aug. 2019
- Developed a Genetic Algorithm for the old Snake Game using pygame library, resulting in a better score for computers than humans after mutating through a series of generations.

Playback Attack Detection for Speaker Verification Systems Jan. 2019 - May 2019
- Analyzed the importance of acoustic speech features namely MFCC, IMFCC, RFCC, and LFCC extracted from ASVSpoof 2017 dataset in classifying genuine and spoof audio signals to avoid Playback Attacks on Speaker Verification Systems.
- Developed a custom Artificial Neural Network using Keras to classify genuine and spoof audio over multiple scenarios, demonstrating the dominance of IMFCC features over other features.

Named Entity Recognizer Guide Jan. 2018 - May 2018
- Implemented a Named Entity Recognition model to identify name, location, date, time, and organization from a paragraph using state-of-art BERT and Bidirectional LSTM.
- Built a graphical interface using Streamlit to showcase the models and contrast the outcomes.

## VOLUNTEERING

**Visamo Kids Foundation**, *Teaching Assistant* Mar. 2018 - Apr. 2018
Helped underprivileged children to overcome difficulties in subjects such as Mathematics, Science, Social science, English ,and Gujarati of their school curriculum.