MANIT BASER

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EDUCATION

B.E. (Hons.) Electrical and Electronics Engineering
Birla Institute of Technology and Science, Pilani

08/2017 - Present   *CGPA: 8.09*

WORK EXPERIENCE

Software Development Intern
Draup ↗

07/2020 - 12/2020   *Bangalore*

Tasks
- Developed various features for the Talent platform using Django, REST APIs, PostgreSQL and Git.
- Optimized the existing APIs in QA platform and reduced the DB hit frequency to enhance data retrieval.
- Optimized the imports and eliminated the circular dependencies in the pipeline.

Deep Learning Research Intern
Central Electronics Engineering Research Institute ↗

01/2020 - 05/2020   *Pilani*

Tasks
- Project based on Automatic Threat Detection in Baggage Security Imagery using Deep Learning Models.
- Paper published on the undertaken project, briefed under Publications section.

Software Development Intern
Sun Mobility ↗

05/2019 - 07/2019   *Bangalore*

Tasks
- Backend development of Flask-based SmartLine applications and hosting them on Apache server.
- Development of a QR based login system for SmartLine applications for faster access.
- Development of an algorithm on anomaly detection in the live data transmitted by the smart batteries.

ACHIEVEMENTS

Flipkart GRiD 2.0 National Finalists ↗
Secured a position in the top 3 teams in Noise Detection & Cancellation track and top 9 teams in the Grand Finale with more than 22,000 participants.

Global Challenge Winners | #EUvsVirus | European Commission | Team CoviFight ↗
Secured second position in the Real-time Communication and Prevention challenge. Organised by the European Innovation Council, with over 9000 participants and 2000 teams. The META Group awarded us with award money for our solution.

Global Finalists | The Global Hack | Garage48 | Team CoviFight ↗
Secured a position in the top 6 teams in the Crisis Response Track. Aimed to develop ideas to face the COVID-19 crisis, with over 6000 participants from 100 countries.

SKILLS

Django REST   Backend Development

Flask   Python   C++   MATLAB

Machine Learning   Deep Learning

Natural Language Processing

Data Science   Computer Vision

Image Processing

PROJECTS

Primary Speaker Separation and Detection in Indian Households and Neighbourhoods
- Developed a real-time speech enhancement and separation system using LSTM networks to separate concurrent speakers.
- Developed a novel GMM which uses MFCC features and their deltas to identify the primary speaker in a noisy environment.
- The model was able to detect the primary speaker with 96% accuracy on the dataset provided in Flipkart GRiD 2.0.

CoviFight ↗
- Led a team of 13 and developed a three-tier contact tracing solution to trace and contain the COVID-19 spread.
- Alerts users about their chances of catching the virus by advanced contact tracing methodology.
- Generates maps with hotspots for what places have virus traces. Regulates selective lockdown for virus containment.

Signed Wallace Multiplier ↗
- Designed a multiplier based on the Wallace reduction tree to provide an area-efficient strategy for high-speed multiplication.
- Designed the architecture using 10 Half Adders and 21 Full Adders and is implemented in Verilog.

PUBLICATIONS

Real-Time Foreground Segmentation for Video Sequences with Dynamic Background ↗
Accepted in 17th IEEE India Council International Conference (INDICON 2020).

Automatic Threat Detection in Baggage Security Imagery using Deep Learning Models
Accepted in 15th IEEE International Conference on Industrial and Information Systems (ICIIS 2020).