Rohan Dubey

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WORK EXPERIENCE

Amazon **Bangalore, India**
Applied Scientist Intern *June 2022 – November 2022*

- Engineered and developed the methodologies to mitigate the bias of model performance across different clusters of the NLU Model for the Alexa NLU data and achieved equitable learning goals and removed language biases using cross-lingual data and data augmentation techniques.
- Monitored the Alexa NLU models and assisted in the successful model release.

Andhra Pradesh Human Resource Development Institute (APHRDI) **Bapatla, India**
Summer Research Intern *May 2020 - July 2020*

- Qualitative and Quantitative Research on COVID-19 in India to predict and plan out the COVID-19 outbreak.
- Predicted and Plotted the COVID-19 Data using Machine learning tools using a modified SEIR model.

Center for Cyber Physical Systems, VIT-Chennai **Chennai, India**
Research Intern *May 2019 – July 2019*

- Simulation of weighted Cost-Sharing Network Game in Multi-cast Routing Networks.
- Planned out the network paths for a hypothetical city using Modified Nash Equilibrium and Graph and Network Theory for better network routing.

EDUCATION

- **Birla Institute of Technology and Science, Pilani** **Hyderabad, India**
- *M.Sc. in Mathematics and B.E in Electrical & Electronics Engineering* *Expected June 2023*

PROJECTS

Bias Mitigation for Equitable Learning *Alexa-NU, Amazon, Bangalore, India.*

- Proposed sequential fine-tuning with continual learning methods (EWC, MAS and their combinations) to reduce algorithmic bias in NLU models and evaluated the methods on MultiNLI and Alexa NLU datasets and claims to outperform existing and baseline models.

Face Mask Detector *Govt. of Rajasthan, India.*

- Developed an AI solution with built in GUI based on the YOLOv5 model, RetinaNet and OpenCV to detect those who are wearing masks or not. This program can run on multiple camera sources and store images without a mask for future identification.

Heart-rate Monitoring System *BITS, Pilani, Hyderabad.*

- Developed a contactless pulse detection software using OpenCV and signal transformation techniques.
- Tested the software with webcam and network IP camera sources and demonstrated its usefulness for hypersensitive people and COVID-19 situation.

Object Detection using Homography Techniques *BITS, Pilani, Hyderabad.*

- Built a fast object detection system using SIFT, FLANN and K-Nearest Neighbor algorithms by using homography techniques.
- Performed real-time image matching from video feed using feature detection and matching techniques.

PUBLICATIONS

Maintaining the frequency of AI-based power system model using Twin Delayed DDPG(TD3) implementation March 2022, *R. Dubey, R. Loka, A. M. Parimi,* 2nd International Conference on Power Electronics & IoT Applications in Renewable Energy and its Control (PARC) PARC), doi: 10.1109/PARC52418.2022.9726615.

Coordinated load frequency control of a smart hybrid power system using the DEMA-TD3 algorithm March 2022, *R. Loka*, *R. Dubey, A. M. Parimi,* Control Engineering Practice, Volume 134, doi: 10.1016/j.conengprac.2023.105480.

Handwritten Image Detection using DCGAN with SIFT and ORB Optical Features 2023 (in press), *R. Dubey, I. Das*, 6th International Conference on Information Systems and Computer Networks.

https://rohandubey.github.io/