Anthony John Dsouza

Linkedin: https://www.linkedin.com/in/tororo/
Github: https://github.com/tororoin

Email : aj.anthonydsouza[at]gmail.com
Mobile : +91 8104395245

Education

- **Agnel Charities' Fr. C. Rodrigues Institute of Technology** Navi Mumbai, India
  Bachelors of Engineering in Information Technology; CGPA: 8.51/10.0 *July 2018 - June 2022*
  Courses: Computer Organization and Architecure, Operating Systems, Automata Theory, Advanced Analysis of Algorithms, Information Retrieval Systems, Big Data, IoT.

Skills Summary

- **Languages**: Python, C, SQL, Bash
- **Tools**: JAX/Flax/Haiku, PyTorch, TensorFlow/Keras, Transformers, TensorBoard, FastAPI, Docker, Triton, GIT, SQL

Current Projects

- **JAX based Gradient Boosting library**: JAX provides an ecosystem for easy distributed computing over GPUs and TPUs, with features like vmap, pmap, pjit and kernel fusion. A GBM written in JAX will help speed up training significantly. (July '22 to ongoing)

Research Projects

- **Using CLIP to detect poachers (Machine Learning, Multimodality, IoT, Anti-poaching)** : Developed a solution to detect poaching and illegal tree felling using multimodal models. Given text prompts, the model could accurately detect poachers and tree fellers BEFORE the act. A node comprising of a low power SBC like Raspberry Pi Zero with camera, IR sensor, GPS and a PIR sensor is used to detect, capture images/videos and send data over to a backend server for further processing using trained CLIP model. (Feb ´22 to Mar '22)
- **Voice Deepfakes for Video Dubbing (Machine Learning, Speech Processing, AI for Education)**: Developed a solution to transcend the linguistic barrier in education by training ASR, NMT, Speech Synthesis model with desired voice and prosody so that learners are able to avail resources irrespective of the source language. (Feb '21 to Mar '22)
- **AI based sub-millisecond poacher detection system (Computer Vision, IoT, Anti-poaching, Object Detection)**: Developed a solution to detect poachers on the edge using quantized object detection model. Deployed Raspberry Pi 3B+ nodes with PIR, IR and Camera modules detected poachers on device and communicated over a pub-sub network. (Feb '21 to Mar '21)
- **DeepFake detection using CNN and Remote Photoplethysmography (Computer Vision, Fake News Detection)**: Implemented a system to detect image manipulation using remote photoplethysmography or rppg and CNN, based on the hypothesis that GANs are superficial learners, and hence cannot accurately model data without artefacts. (Jan '20 to Mar '20)

Publications

- **SynthPipe : AI based Human in the Loop Video Dubbing Pipeline**: A. J. Dsouza, A. Rachel Kumar, A. K. Wilson and R. Deshmukh, 2022 Second International Conference on Advances in Electrical, Computing, Communication and Sustainable Technologies (ICAECT), 2022, pp. 1-5, doi: 10.1109/ICAECT54875.2022.9807853