Asapanna Rakesh (website / blog / projects: INF800.GITHUB.IO)

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Experience

GENESYS INTERNATIONAL CORPORATION LTD <div style="float:right">Mumbai, IN-MH</div>
Sr. Research Engineer *(Geospatial Domain)* <div style="float:right">Jan 2021 – Current</div>
- Built system for extraction of **3D street digital assets** from 2D panoramic images for **India** • **5cm accuracy** (tested in Jaipur, Pune & Mumbai) • To be run on **thousands of kilometers** in **top 100 Indian cities** • Algorithms with **advanced image processing algorithms, linear algebra & trigonometry.**
- Automated **hoarding board information extraction** using novel techniques led to **2 patents.**
- **Optimized latency** of **high-resolution** 360deg image using **multiresolution** format for **thousands of kilometers. Demonstrated with PoC for the sustainability of the tool** for google-street view like product - WoNoBo.
- Built **pipelines for 2D images and 3D LiDAR data annotation** with both client-side and server-side architecture using **WebGL, microservices, Redis**, IndexDB, MongoDB etc. to be used by the entire data annotation team.
- **Interviewed and hired** a major portion of the ML team • Built **multiple in-house tools**

CREATE JOY TECHNOLOGIES <div style="float:right">Bangalore, IN-KA</div>
Machine Learning Engineer *(Video Tech Domain)* <div style="float:right">Mar 2021 – Nov 2021</div>
- Created novel & optimized **O(n) algorithm for motion detection** & deployed in production environment (client-side) for **video-tech** platform. Used by **thousands** of children over the video calls.
- Built **motion capture** from monocular video cues (PoC). Worked on optimizing client-side performance using **service workers and WebGL**.
- Implemented **gesture recognition**. Built & **gamified data annotation platform** to collect data from children.

IREADRX.AI <div style="float:right">Bangalore, IN-KA</div>
NLP Engineer *(Life sciences Domain)* <div style="float:right">Mar 2021 – Jul 2021</div>
- Worked on **PDF analytics** and **bioassay detection** from patent documents using **topic modeling, semi-supervised learning, AutoML and weak supervision** - Lead to company's **funding from clients**.
- Extracted **compound structure information (mol files)** from markush diagrams in PDF documents using image processing techniques (outperforming deep learning) • **optimized source code using Java.**

LOGITECH INTERNATIONAL <div style="float:right">Chennai, IN-TN</div>
Engineer Intern *(Bluetooth Low Energy Domain)* <div style="float:right">Jan 2020 – Mar 2020</div>
- Developed prototype of **generic tool & algorithm** to validate over the air **Bluetooth Low Energy Logs** and render sequence diagrams via web-based UI • Grew into a **widely used tool in BLE Team.**
- Implemented **dynamic programming algorithms** with reusable codebase & **cython optimization.**

NEWGEN IEDC - AKC RESEARCH LAB <div style="float:right">Chennai, IN-TN</div>
Co-Founder & Computer Vision Developer *(Agri-tech Domain)* <div style="float:right">Jan 2019 – Jan 2020</div>
- Successfully **secured funds from MHRD**, India. **Invited to Google office**, Hyderabad for funding.
- Worked on **Edge ML** (various devices and optimizations) to detect & dispel wild animals in farmlands.

Skills

Programming: Advanced **Python3 & Javascript**. Handle **Swift, Java, Julia, Dart, C++** & **SQL** projects
Deep learning: Tensorflow, Pytorch, JAX • AutoML • Fast.ai, Detectron2, HuggingFace, Open3D-ML • SOTA models
Frontend: React, Steamlit, WebGL, Flutter **Backend:** Node, Django, FastAPI **DB:** MongoDB, Postgres, Kafka, Elastic
Cloud / DevOps: AWS, GCP, Docker, Kubernetes, IaC, Microservices, Distributed Ray.io, Github Actions, Jenkins.
EdgeML, IoT & others: Nvidia Jetson Nano, Raspberry Pi variants, Bluetooth Low Energy, nmap & cybersecurity.

Education

Dr. MGR EDUCATIONAL & RESEARCH INSTITUTE <div style="float:right">Chennai, IN-TN</div>
Bachelor of Technology in Computer Science and Engineering • Member of Computer Society of India <div style="float:right">2017-2021</div>
KENDRIYA VIDYALAYA <div style="float:right">Kochi, IN-KL</div>
AISSE CGPA **9.8** • **97 of 100** in computer science with **C++** in the AISSCE board examination. <div style="float:right">2017</div>