Jaimin Bhoi

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Education

University of Central Florida — Aug 2023 – Pursuing
Master's in Computer Vision — GPA: 4.0 — *FL, USA*

A.D.Patel Institute of Technology — Apr 2014 – Mar 2018
Bachelor of Computer Engineering — *Gujarat, India*

Experience

University of Central Florida — Dec 2023 – Current
Individual Contributor - @ UCF - College of Medicine — *FL, USA*

- Working on medical DICOM data which deals with femoral and tibial bone alignment
- Adapting Segment Anything Model to extract segments from CT scan images
- Implementing incremental learning to discard negative masks and fine-tune SAM model

Tata Consultancy Services(TCS) — Jun 2018 – Jun 2023
Systems Engineer — *Bangalore, India*

- Led a team of 3 who developed deep learning models with more than 90% accuracy in production
- Designed and Developed multiple Deep learning models/solutions for vision as POC and Production
- Developed REST APIs for DL models using Flask/RestX and Azure Kubernetes for serving 10k+ requests per hour

Research Associate — *Apr 2020*

- Developed an innovative solution on Crowd Analytics anomaly detection
- Built POC on Drone-based Aerial Video Analytics for social distancing
- Worked on Video Analytics-based Social Distancing (static camera)
- Developed Face Mask Compliance for Covid Link

Patents/Publications

An Efficient Ensemble-Based Deep Learning Model for the diagnosis of Cervical Cancer | *ISCAIE* 2022

Aerial Video Analytics based dynamic Non-linear distance measurement between on-ground objects | 2022

Method and system to detect a text from multimedia content captured at a scene | 2022

Projects/Research

EEG Vis | *CLIP, LDM, Stable Diffusion, GAN* — Jan 2024 - Current

- This is my 7-year-old idea to research Electroencephalography (EEG) signals to enhance the understanding of the human brain. Investigating the intricacies of EEG signals and their correlation with cognitive processes. Applying computer vision techniques to transform EEG signals into visual representations, effectively bridging the gap between brain activity and visual interpretation. This research aims to pave the way for advanced brain-computer interface technologies and provide improved insights into cognitive functions.

Human Activity Recognition on Static Images (HAR) | *CLIP, Prompt Engineering* — Oct 2023 – Dec 2023

- Leveraged contrastive learning and Prompt engineering to address inter-class variance. Trained a CLIP model projection head on HAR dataset, achieving remarkable accuracy and explainable activities using Top-K metric parameters. Employed advanced techniques to enhance model robustness and interpretability in activity recognition.

Self Checkout Theft Prevention (RetailEye) | *Python, State Machine, NVIDIA Jetson* — Sep 2023 – Dec 2023

- Engineered and ported an AI-integrated self-checkout system to Nvidia Jetson, ensuring seamless, error-free transactions. Implemented AI capabilities to prevent thefts like barcode switching and non-payment, enhancing security and efficiency within the self-checkout process.

Container Image Analytics | *Python, Flask, AzureML, Docker, RestX* Mar 2021 – Jun-2023

- Developed, optimized, and deployed diverse image models for live production across platforms. Implemented a tailored Continuous Learning Framework (CLF) for AzureML's Deep Learning models, enabling efficient deployment on AKS clusters. Pioneered a Proof of Concept (POC) with Autoencoders/GANs for Damage anomaly detection and crafted GradCAM visualizations for precise model insights.

QC RB500 Development Board | *Android, DL Models, JAVA, C++, JNI* Jun 2020 – Feb 2021

- Engineered multiple cutting-edge solutions including Face Recognition using Dlib, People Heatmap, TicketSwitch utilizing YOLOv3, and a State machine-based Self-Checkout Theft detection system for retail environments. Skillfully adapted four distinct C++ computer vision solutions to the Android platform using JNI, further customizing C++ libraries for seamless integration.

Drunk and Drowsiness Alert System(DADAS) Project Link | *Python,AWS,Dlib,DL* Jun 2017 - Aug 2017

- Led a high-performing team of three, achieving a top 20 position among 86,000+ participants. Spearheaded the development of innovative solutions: a Video Analytics-driven drowsiness detection system, Deep Learning-powered drunk face detection model, and a GPS-based IoT analytics system for accidental prone zone identification.

Skills

Soft skills: Teamwork, Self-motivation, Leadership, Responsibility,Adaptability
Languages: Python,Java,C/C++, JavaScript, HTML/CSS
Frameworks: Flask, Flask-restx
Developer Tools: Git, Docker, VS Code, Visual Studio, PyCharm, Android Studio
Libraries: OpenCV, Pandas, Numpy, Pytorch, Tensorflow, Keras, Jupyter Notebook, Matplotlib
Cloud: Azure, AzureML