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

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 more than 10k requests per hour

Research Associate *Apr 2020 - Jun 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

Assistant Systems Engineer / Assistant Systems Engineer - Trainee *Jun 2018 - Apr 2020*

- Developed In-vehicle Infotainment Systems based on state machines for a leading Japanese Automotive Industry

Publications

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

- Designed a unique algorithm for uniform data distribution for train and test set
- Published a paper on Diagnosis of Cervical Cancer on unbalanced data and achieved 97% accuracy

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

- Filed a patent on vanishing point-based ground objects measurement

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

- Filed a patent on Random orientation compatible OCR, especially vertical text

Projects

Human Activity Recognition on Static Images (HAR) | *Python* 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.

In-Vehicle Infotainment System | *Visual State Machines, In-house tools* Jun 2018 – Jun 2020

- Contributed to a large agile project, developing a State machine-based app navigation system, ensuring smooth transitions. Collaborated in its design and implementation, employing agile methodologies for iterative refinement, crucially enhancing user experience within the project.

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,Tensorflow, Keras, Jupyter Notebook
Cloud: Azure, AzureML