

K BHANU PRAKASH

Hyderabad

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CAREER SUMMERY

- Extensive work experience in ML, CV and image processing algorithm development.
- Hands on experience in C/C++, MATLAB and python programming.
- Experience on Optimization and porting of Image processing algorithms on TI platform.
- Excellent knowledge on ADAS and AD platform technology.

EXPERIENCE

ZF india pvt Ltd, Hyderabad	(August 2018 – Present)
Designation: Senior engineer	Division: Perception systems
HYUNDAI Mobis india Ltd, Hyderabad	(July 2017 – August 2018)
Designation: Technical leader	Division: Mechatronics(Camera)
TATA Elxsi Ltd, Transportation Business Unit, Bangalore	(March 2015 – July 2017)
Designation: Senior Engineer	Division: ADAS
Wineyard technologies, Hyderabad	(August 2011 – March 2015)
Designation: Application Engineer	Division: DIP

EDUCATIONAL QUALIFICATIONS

Bachelor of Technology in Electronics and Communication Engineering (JNTU)	
<i>Sri Kottam Tulasireddy memorial college of engineering, Kondair</i>	Sept 2007 – May 2011
Intermediate in Math's, Physics and chemistry	
<i>Y.R.M Junior college, Kalwakuthy</i>	June-2005 – May 2007
Secondary school certification (SSC)	
<i>Z.P High school, Gattu ippalapally</i>	June 2004 – May 2005

TECHNICAL SKILLS

Skill	Technology	Experience	Tools used
Python	✓ Implementing Deep learning and CV algorithms	6 years (Advanced)	IDEs: Pycharm, VS Code Version control software: Git
C++	✓ CV Algorithm development. ✓ Algorithm level optimization. ✓ Porting algorithms to TDA2xx platform ✓ Implementing ARM15 (A15) intrinsic ✓ Implementing VCOP(EVE) kernel	4 years (Advanced)	IDEs: Microsoft Visual studio, Code composer studio(CCSv7) Version control software: Tortoise SVN, Git. Bug Tracking Tool: JIRA. Frame work: OpenCV.
MATLAB	✓ Implementing CV Algorithms. ✓ Implementing tolls for validation	3 years (Intermediate)	MATLAB R2015a

PROJECTS

Reference algorithm pipeline development	(June 2021 –Present)
Client : ZF	Team size : 7 Members
Description: Development of Reference algorithms for validating device under test algorithms and generating ground truth for training algorithm. End-to-end pipeline development of validation tool using HaneyJar dashboard.	
Responsibilities: <ul style="list-style-type: none"> Implementing CNN models for Object detection in Lidar 3D point-cloud. Implementing end-to-end data exporter for Lidar point cloud synchronizing with camera data. Implementing python interfaces for HaneyJar using Dash programming. Validating Dut algorithms with reference algorithm output. 	
Failsafe	(March 2018 – May 2021)
Client : ZF	Team size : 4 Members
Description: Failsafe algorithms are the preprocessing techniques used in Computer vision and machine learning algorithms for Object and lane detection, usually in FCW and LDW.	
Responsibilities: <ul style="list-style-type: none"> Implementing CNN models for camera extrinsic and intrinsic defects detection. Data recording and synthetic data generation for model learning. Tuning hyper parameters to achieve better performance. Training and validation of models. Validating models with state-of-the-art algorithms 	
Extended lane detection:	(Sept 2018 – Feb 2019)
Client : ZF	Team size : 3 Members.
Description: Lane departure warning system is a mechanism designed to warn the driver when the vehicle begins to move out of its lane on freeways and arterial roads. These systems are designed to minimize accidents by addressing the main causes of collisions: driver error, distractions and drowsiness.	
Responsibilities: <ul style="list-style-type: none"> Implementing CNN models for semantic segmentation and lane detection. Tuning hyper parameters to achieve better performance. Training and validation of models. 	
Camera Failsafe	(Aug 2017 – Aug 2018)
Client : Hyundai	Team size : 6 Members.
Description: Failsafe algorithms are the preprocessing techniques used in Computer vision and machine learning algorithms for Object and lane detection, usually in FCW and LDW. To control the system output and switching cars from autonomous mode to manual mode when camera fails to capture.	
Responsibilities: <ul style="list-style-type: none"> Implementing camera blockage detection and sun light glare detection algorithms. Analyzing all fail safe algorithms to improve performance for real-time processing. Conversion of algorithms from OpenCV to natural C and Floating point to fixed point implementation. Algorithm decomposition to various cores in target platform(i.e ARM, EVE, DSP) Assigning algorithm modules to team members for optimization Optimizing and porting algorithms in C and A15(ARM) and EVE cores for TDA2xx platform Testing performance in target platform Reviewing the code for accuracy checking Modifying and releasing code based on client inputs 	
360 BEV Gap Analysis	(Nov 2016 – Dec 2016)
Client : Delphi	Team size : 2 Members
Description: BEV (Bird's eye view) provides the driver 360-degree view of the area surrounding the vehicle using four side views. Here we use four cameras placed on all sides of the car. The system output provides Top view of the vehicle along with one single view.	
Responsibilities: <ul style="list-style-type: none"> Analyzing the complete BEV algorithm, Calibration algorithms. Identifying the Gaps in algorithm and improvements required. 	

<u>Driver readiness Analysis(DRA)</u>	(Nov 2015 – August 2016)
Client : Nexteer Automotive	Team size : 12 Members.
Description: A two- camera system, which monitors driver's face, eyes, head pose, body and hands to decide whether the driver is ready to take control of the car while switching from autonomous to manual mode. System implemented on NVidia's Tegra X1 board.	
Responsibilities: <ul style="list-style-type: none"> Implementing Hand and Body pose detection algorithm and eye gaze detection algorithm in C++ without OpenCV. Feature extraction algorithm is implemented using HOG descriptor with mixture models. SVM classifier with distance transform used for body poses detection. Implementing Machine learning algorithm in MATLAB for training and model file generation. Implementing Annotator for Hand and Body pose. Algorithm level and C level optimization. Re-structured the algorithm flow for optimization. Tools: Microsoft visual studio 2012, MATLAB R2014a. 	
<u>Intel Computer Vision Road Map (ICV 2015)</u>	April 2015 – Oct 2015
Client: Intel corporation	Team size: 20 Members
Objective: Implementation of computer vision algorithms for Advanced driver assistance systems(ADAS).	
Responsibilities: <ul style="list-style-type: none"> Implementing Algorithm for Object detection and recognition on real time videos. Implemented Feature extraction algorithm using Centrist and integrated classification using Adaboost. Testing and validation for accuracy of the algorithm. Testing and improvements for Lane departure warning (LDW) system. Vision library module implementation. Tools: Microsoft visual studio 2012, MATLAB 2014a. 	
<u>Robot Motion Control System for Industrial Monitoring</u>	Jan 2015 - March 2015
Client: Wineyard	Team size : 5 Members
Objective: Designing an autonomous robot motion control application using image processing for industrial applications. Sign recognition algorithm used for robot motion control.	
Responsibilities: <ul style="list-style-type: none"> Implementing Object detection and sign recognition algorithms. Understanding ARM architecture and interface with MATLAB. Linear convolution, Histogram matching, Hough transformation algorithm module are used for sign board detection. Tools: MATLAB R2013a. 	
<u>Face recognition and facial expression identification</u>	Sept 2014 - Dec 2014
Client: Wineyard	Team size: 5 Members
Objective: A biometric system, which identifies and recognizes face for industrial security. HOG Descriptor used as feature for face matching algorithm. Haar cascade classifier used for face detection.	
Responsibilities: <ul style="list-style-type: none"> Implementing face detection and recognition algorithm. Interfacing algorithm response with controller from MATLAB. Interfacing GSM for message alert. Tools: MATLAB R2013a, Keil v4. 	
<u>License plate recognition system</u>	Sept 2013 - July 2014
Client: Wineyard	Team size: 5 Members
Objective: Design an efficient automatic authorized vehicle identification system by using the vehicle number plate. The system is implemented on the entrance for industrial parking area.	
Responsibilities: <ul style="list-style-type: none"> Implementing car number plate detection and recognition algorithm. Data set collection for number plate identification and training. Testing algorithm response in real-time scenarios. Tools: MATLAB R2013a, Visual studio 2012, OpenCV. 	
<u>Traffic control system</u>	(Oct 2012 to March 2013)

Client: <u>Wineyard</u>	Team size: 5 Members
Objective: A Multi-camera application for determining traffic congestion on roads using image processing techniques and a model for controlling traffic signals based on information received from images of roads taken by video cameras.	
Responsibilities: <ul style="list-style-type: none"> • Implementing background subtraction algorithm for object tracking and counting in MATLAB. • Analysis on Multiple camera system and image acquisition. • Gaussian mixture model (GMM) used for Background modeling. • Connected component analysis for object tracking. • Tools: MATLAB R2009a. 	
<u>Iris recognition and biometric identification</u>	Jan 2012 - Sept 2012
Client: <u>Wineyard</u>	Team size: 5 Members
Objective: A system application, which recognizes the iris pattern and used for human authentication system. The algorithm is simple and effective for recognizing the iris templates in IR vision.	
Responsibilities: <ul style="list-style-type: none"> • Implementing circular Hough transform for iris detection in MATLAB. • Understanding feature extraction using Wavelet transformation. • Tools: MATLAB R2009a 	

HOBBIES

Playing cricket | Singing | Listening to music

Hyderabad, TS

(K BHANU PRAKASH)