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RESUME SUMMARY

Experienced and accomplished Algorithm Developer with over six years of experience looking to leverage extensive background in Machine Vision, Computer Vision, ADAS, Machine Learning, Natural language processing based application development.

EXPERIENCE

1. *Capgemini Technology Services India Ltd., Pune, Maharashtra, India*
   Technical Lead **March 2015 – Present**

   Following is the project work details.

   Suspected bleeding detection in wireless capsule endoscopy image
   Algorithm is proposed to detect suspected bleeding region in WCE image using saliency map and SVM classifier.

   Sanskrit Subanta Analyzer
   Vibhakti identification of Sanskrit noun word is achieved using natural language processing algorithm. This is achieved with following steps like Sanskrit language detection, word tokenization, gender identification, vibhakti, case and number identification using suffix mapping. Open source python libraries like polyglot and nltk is used to develop prototype.

   Machine learning based prototype development
   Different prototype development like house price prediction, data classification, movie recommender system, image compression, anomaly detection, handwritten digit (0 ~ 9) classification based on various machine learning algorithms like regularized linear regression, logistic regression, neural network (NN), support vector machine (SVM), K-mean clustering, principal component analysis (PCA), Anomaly detection, collaborative filtering algorithm, gradient descent (GD), stochastic gradient descent (SGD).

   Plant Object Recognition
   Identification of piping plant objects like cylinder and different type of beam structures. It is achieved by processing 3D point cloud data using proposed algorithm for cylinder fitting and beam fitting.

   Oversized Rock Detection
   Algorithm is proposed to detect different blockage scenario during bigger sized rock to small particle conversion process in mining industry.

2. *Jekson Vision Pvt. Ltd., Ahmedabad, Gujarat, India (3 years, 10 Months)*
   Research Engineer **May 2011- March 2015**

   Following is the details of research project work done.

   Image Un-warping
   Cylindrical image is transformed into planar image using mathematical equations for cylindrical to planar coordinate system conversion.

   Image panorama/ Image stitching
   Panorama is achieved by different steps like Harris corner based key point detection, SIFT based feature extraction, RANSAC based homography estimation and linear image blending.

English OCR for non-ideal printing cases
It is done by improving various stages for OCR like, Image binarization, Feature extraction and character classification approach.

Printing quality measurement
It is done by measuring PQ attributes mentioned in ISO 13660:2001(Stroke density, Character area, Perimeter length, Satellites), ISO 12233:2000 (Line raggedness, Slant line edge quality using MTF) and some industrial specific attributes (Detection of void/Line crack and Stroke width).

Lens distortion correction
Barrel and pincushion distortion is corrected by mathematical modeling based image transformation.

Liquid level measurement
Algorithm is proposed for level measurement and it is applied on segmented image obtained using thresholding in gray or color image.

Object Presence/Absence Detection
It is achieved using pattern matching and image segmentation approach. Image segmentation is performed using color thresholding with different color space option like RGB, HSL and L*ab.

3. *C.U. Shah College of Engineering & Technology, Surendranagar, Gujarat, India (2 Months)*
   Lecturer **July 2009 - Sep 2009**
   Subject - Image processing

INDUSTRIAL TRAINING

1. *Viztek Technologies Pvt. Ltd., Ahmedabad (10 Months)*
   Trainee Engineer **July 2010 - April 2011**
   Developed English OCR system for non-ideal printing cases and print quality measurement.

2. *Reinfold Physical Innovation Lab, Ahmedabad (3 Months)*
   Trainee Engineer **May 2007 - Aug 2007**
   Learned basics of embedded system, Definition of kernel 2.6, Linux Device driver Character driver)

3. *MATRIX Telecom Solutions, Baroda (1 month)*
   Trainee Engineer **June 2006 - July 2006**
   Learned various aspects of EPABX manufacturing & support department

TECHNICAL SKILLS

Programming Language: C, C++, SSE Programming, MATLAB, Octave, Python, R
Open Source: OpenCV, Tensorflow, Theano, PCL

CERTIFICATIONS

"**Machine Learning**", course is verified and authorized by Stanford University, U.S. which is offered through Coursera with course duration of 3 months.

PUBLICATIONS

"**Feature Extraction and Character Classification of OCR (English) for Non-Ideal Printing Cases**", ICSSA-2011 at GCET, Vallabh Vidyanagar, ISBN: 978-1-6123-3002-0."

EDUCATION

1. *Dharmsinh Desai University, Nadiad, Gujarat, India*
   M.Tech. (Electronics & Communication) **2011**
   Specialization: Image Processing
   Thesis: "OCR for English with emphasize of similar appearing symbols for non-ideal printing cases"
   Score: 7.2 CPI (First class with Distinction)
   Honors: Obtained degree with 2nd rank in university and 2nd rank in simulation competition (image processing) at D.D.U., Nadiad.

2. *C.K.Pithawalla College of Eng. & Tech., Surat, Gujarat, India*
   B.E. (Electronics & Communication) **2008**
   Project: "Face recognition using PCA"
   Score: 63.61% (First Class)

3. *G.S.H.S.E.B., Gandhinagar, Gujarat, India*
   H.S.C. (Science) **2003**
   Score: 69.69% (First Class)
4. *G.S.E.B., Gandhinagar, Gujarat, India*
   S.S.C. (English) **2001**
   Score: 88.00% (Distinction)

LANGUAGES

Gujarati: Native language
Hindi and English: speak fluently and read/write with good proficiency