Surajit Dutta

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Indian | Male | DOB: 09.02.1989

EDUCATION

TU CHEMNITZ
MSc in Automotive Software Engineering
Sept 2015 | Chemnitz, Germany
Grade: 2.1

ACHARYA INST. OF TECH.
BE in Electronics & Communication Engineering
July 2011 | Bangalore, India
Grade: 1st Class

LINKS

COURSEWORK

GRADUATE
Machine Learning + Lab
Artificial Intelligence
Image Processing + Lab
Embedded Systems
Real Time Systems
FPGA Lab
AUTOSAR Lab (Application Layer)

UNDERGRADUATE
Digital Circuit + Lab
Digital Communication + Lab
Control Systems
Radar & Microwave
DSP + Lab
Microcontroller + Lab
Microprocessor + Lab
Digital Image Processing

SKILLS

</> PROGRAMMING
Language
C • C++ • Matlab • Python • VHDL
API, Tool, IDE & OS
OpenCV • OpenCL • OpenGL • Matlab/Simulink/Octave • Visual Studio/Eclipse • Linux/Windows
Framewok
Caffe • Torch • Theano • MatConvNet
Documentation Framework
LaTeX• Doxygen
Version Control Client
Git • TortoiseSVN

EXPERIENCE

</> OBJECT DETECTION FRAMEWORK | Industrial Experience
Apr 2015 – Oct 2015 | CMORE Automotive GmbH, Lindau, Germany
- Pedestrian detection using cascade AdaBoost-SVM
- Lane marker detection using SVM, Logistic Regression, GMM, Decision Tree

OBJECT DETECTION | Industrial Experience
May 2014 – Apr 2015 | Continental AG, Lindau, Germany
- Tricky feature representation of the object to be detected under poor illumination, contrast
- Improving the machine learning algorithms to model unbiased classifier
- Performance investigation using Qualitative and Quantitative Evaluations

OPTICAL CHARACTER RECOGNITION | Vocational Project
Aug 2010 – Nov 2010 | Acharya Institute of Technology, Bangalore, India
- SIFT-PCA based feature representation of the segmented character images
- Training muliclass SVM for multiple instances of all different characters
- Shape-context and χ^2 distance based character matching

FACE RECOGNITION | Vocational Project
Nov 2009 – Feb 2010 | Acharya Institute of Technology, Bangalore, India
- Fast detection of faces using fast rejection of negative regions using Haar Wavelets
- PCA based feature compression and denoising
- Eigen face based face recognition

RESEARCH

MACHINE LEARNINIG ON LARGE DATA | Master Thesis
Nov 2014 - Apr 2015 | Continental AG, Lindau, Germany
Efficient Learning of Large Imbalanced Training Datasets for Support Vector Machines. This includes developing a vanilla SVM which is based on
- Stochastic Gradient Descent based learning
- Balancing the object classes and subclasses (e.g. non-pedestrian, pedestrian-frontal, pedestrian-lateral, pedestrian-truncated)
- Optimizing SVM (Runtime + Accuracy)

PEDESTRIAN DETECTION | Research Internship
May 2014 – Oct 2014 | Continental AG, Lindau, Germany
Pedestrian Detection at Night Scenes using Edge Enhanced Features. An increment of 10% in average precision has been achieved. The work includes
- Concatenation of Random Forest based enhanced edge with HOG features
- Training SVM model for the pedestrian class
- Performance evaluation

REFERENCES

Dr. Patrick Ott
Dipl-Inf. (FH), HRF (Leeds)
Machine Learning Expert
Ott & Busch Intelligent Solution
patrick.ott@ott-busch.com

Dr. Julien Vitay
Chair of Artificial Intelligence
Faculty of Computer Science
TU Chemnitz
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