

## 🎓 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: 1<sup>st</sup> 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

Languages  
C • C++ • Matlab • Python • VHDL • Go  
API, Tools, IDE & OS  
OpenCV • OpenCL • OpenGL •  
Matlab/Simulink/Octave • Visual  
Studio/Eclipse • Linux/Windows  
Frameworks  
Caffe • Torch • Theano • MatConvNet  
Documentation Frameworks  
L<sup>A</sup>T<sub>E</sub>X • Doxygen  
Version Control Clients  
Git • TortoiseSVN • MKS

## 💼 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

↓<sub>2</sub>↑<sub>1</sub> **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 multiclass SVM for multiple instances of all different characters
- Shape-context and  $\chi^2$  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 LEARNING 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  
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**Dr. Julien Vitay**  
Chair of Artificial Intelligence  
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