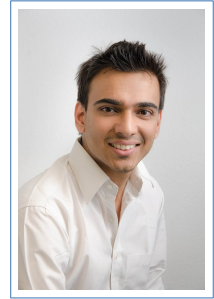







# Vivek Sharma

## Curriculum Vitae




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<https://cvhci.anthropomatic.kit.edu/~vsharma>



## Work Experience

- 3/17-Now  **DFG Funded Project: PLUMCOT.**  
Institute for Anthropomatics and Robotics, CV:HCI Lab, Karlsruhe Institute of Technology (KIT).  
Position: Research Assistant/ PhD Candidate. Employer: Prof. Dr. Rainer Stiefelwagen.
- 6/18-06/18  **Research Visit.**  
University of Paris-Sud and LIMSI. Position: Visiting Researcher. Employer: Prof. Claude Barras,  
Asst. Prof. Camille Guinaudeau, Dr. Herve Bredin.
- 01/15-1/17  **EU Funded Project - ROVINA.**  
Department of Electrical Engineering (ESAT) - Center for Processing Speech and Images (PSI), **KU Leuven**. Position: Research Assistant. Employer: Prof. Luc Van Gool, KU Leuven/ETH Zürich
- 11/11-10/12  **Project: ViMuDat.**  
Visual Inspection Systems (SPR), **Fraunhofer IOSB**. Position: Research Associate. Employer: Prof. Dr. -Ing. Thomas Längle, Head of the Research Group.
- 08/11-10/12  **Project: CADaVISION (BMBF 01ISO9036B), [Link-to-PDF](#).**  
Institute of Process Control, Automation & Robotics, Karlsruhe Institute of Technology (KIT).  
Position: Guest Researcher. Employer: Prof. Dr. -Ing. Heinz Wörn, Dean of Computer Science.

## Education

- 03/17-Now  **PhD Thesis: Towards learning an effective image and video feature representation with convolutional networks, Project: PLUMCOT.**  
Computer Vision for Human-Computer Interaction Lab (CV:HCI), Karlsruhe Institute of Technology (KIT). Supervisor: Prof. Dr. -Ing. Rainer Stiefelwagen.
- 09/12-09/14  **Color in Informatics and Media Technology (CIMET): Master of Science (M.Sc.),**  
*I-Sem: University Jean Monnet, FRANCE. M.Sc. in "Optics, Image, Vision". II-Sem: University of Granada, SPAIN. M.Sc. in "Informatics & Media Technology". III-Sem: Norwegian University of Science and Technology, NORWAY. M.Sc. in "Applied Computer Science". IV-Sem: Karlsruhe Institute of Technology, GERMANY. "Master Thesis".*  
CGPA - 7.8/10 with Distinction Marks (Honours), ECTS - 120.
- 08/07-07/11  **Computer Science & Engineering: Bachelor of Technology (B.Tech.), B.K. Birla Institute of Engineering and Technology (BKBIET), INDIA.**  
CGPA - 7.73/10 with First Division.

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## Academic Thesis & Project

### Master

01/14-06/14



**Thesis: Training and Evaluation of a Framework for Pixel-wise Object Class Segmentation based on Synthetic Depth Data**, Project (KIT): **AMIKA**.

Karlsruhe Institute of Technology (KIT), Norwegian University of Science and Technology (NTNU), University of Oslo (UiO) and Oslo University Hospital HF. Supervisor: Prof. Dr. -Ing. Heinz Wörn (KIT) and Assoc. Prof. Dr. Şule Yildirim Yayilgan (NTNU) and Assoc. Prof. Dr. Ole Jakob Elle (UiO & Oslo University Hospital HF).

11/13-12/13



**Project: Hyperspectral Imaging Workflow & Encoding Standards**, *Link-to-PDF*.

Norwegian Colour and Visual Computing Laboratory, and NTNU. Position: Student Research Assistant. Supervisor: Prof. Jon Yngve Hardeberg

8/13-12/13



**Industrial Project: Waste sorting by Intelligent Machine Vision**, *Link-to-PDF*.

University of Eastern Finland (UEF), Norwegian University of Science and Technology (NTNU), and ZenRobotics (Finland). Supervisor: Prof. Markku Hauta-Kasari & Prof. Jon Yngve Hardeberg.

8/13-11/13



**Project: Scene Understanding using Conditional Random Fields for Safe Human Robot Collaboration**, *Link-to-PDF*.

Norwegian Colour and Visual Computing Laboratory, UiO, and NTNU. Position: Student Research Assistant. Supervisor: Prof. Dr. Faouzi Alaya Cheikh

6/13-8/13



**Internship: Material identification in different weather conditions for unsupervised traffic control systems**, *Link-to-PDF*.

Color Imaging Lab, University of Granada (UGR), and Tecnalia Robotiker (Bilbao, Spain). Supervisor: Prof. Eva M. Valero (UGR).

2/13-6/13



**Project: 3D cloud maps**, *Link-to-PDF*.

Andalusian Center for Environmental Research (CEAMA), University of Granada (UGR), NASA AERONET (Aerosol Robotic NETwork). Position: Student Research Assistant. Supervisor: Prof. Lucas Alados Arboledas, Head of the Atmospheric Physics Institute.

### Bachelor

01/11-06/11



**Thesis: Gesture Recognition & Reproduction.**

B.K. Birla Institute of Engineering and Technology. Supervisor: Assoc. Prof. Lovendra Solanki, Dean of Electrical & Electronics Engineering Department.

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## Awards

2013 **Appreciation.**

Overall topper of the 1st semester of my Master courses taken at University of Jean Monnet.

2012 **European Commission Scholarship.**

Awarded an amount of 48,000 Euros for my Master program, selected among 500 candidates.

2011 **Appreciation.**

Among the top 10% out of 65 students graduated B.Tech in Computer Science, BKBIET.

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## Conference and Workshops Attended/Organized

### Publications

2019 M. Saquib Sarfraz, **Vivek Sharma**, and Rainer Stiefelhausen. Efficient Parameter-free CVPR Clustering Using First Neighbor Relations. *In IEEE CVPR, Oral*.

2019 **Vivek Sharma**, Makarand Tapaswi, M. Saquib Sarfraz, and Rainer Stiefelhausen. Self-Supervised Learning of Face Representations for Video Face Clustering. *In IEEE Automatic Face and Gesture Recognition (FG), Oral*.

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<sup>0\*</sup> contributed equally to the work, and not in alphabetical order.

- 2018 Ali Diba, **Vivek Sharma**, Rainer Stiefelhagen, Luc Van Gool. Object Discovery By Generative  
arXiv-Link Adversarial and Ranking Networks. *CoRR abs/1711.08174*. Under review.
- 2018 **Vivek Sharma** and Sule Yildirim-Yayilgan. Real-time Holistic Scene Understanding using  
Single Depth Images for Safe Human-Robot Collaboration. Under review.
- 2018 **Vivek Sharma**\*, Concong Wang\*, Yu Fan, Faouzi Alaya Cheikh, Azeddine Beghdadi, Ole  
CIC Jacob Elle, and Rainer Stiefelhagen. Can Image Enhancement be Beneficial to Find Smoke  
Images in Laparoscopic Surgery? *Color and Imaging Conference (CIC)*, Oral.
- 2018 Ali Diba, Mohsen Fayyaz, **Vivek Sharma**, Amir Hossein Karami, Rahman Yousefzadeh,  
ECCV Juergen Gall, Luc Van Gool. Spatio-Temporal Channel Correlation Networks for Action  
Classification. *European Conference on Computer Vision (ECCV)*, Poster.
- 2018 **Vivek Sharma**, Ali Diba, Davy Neven, Michael S. Brown, Luc Van Gool, Rainer Stiefelhagen.  
CVPR Classification Driven Dynamic Image Enhancement. *In IEEE CVPR*, Poster.
- 2018 Ali Diba, Mohsen Fayyaz, **Vivek Sharma**, Amir Hossein Karami, Mohammad Mahdi Arzani,  
CVPR Rahman Yousefzadeh, Luc Van Gool. Temporal 3D ConvNets using Temporal Transition  
Layer. *In IEEE CVPR Workshop: Brave New Ideas for Video Understanding*, Oral.
- 2017 **Vivek Sharma**\*, Ali Diba\*, Luc Van Gool. Deep Temporal Linear Encoding Networks. *In*  
CVPR *IEEE CVPR*, Poster.
- 2017 Ali Diba, **Vivek Sharma**, Ali Pazandeh, Hamed Pirsiavash, Luc Van Gool. Weakly Supervised  
CVPR Cascaded Convolutional Networks. *In IEEE CVPR*, Poster.
- 2017 **Vivek Sharma**, Saquib M. Sarfraz, Rainer Stiefelhagen. A Simple and Effective Technique for  
CVPR Face Clustering in TV Series. *In IEEE CVPR Workshop: Brave New Motion Representations*,  
Poster.
- 2017 **Vivek Sharma**, Jon Yngve Hardeberg, Sony George. RGB-NIR Image Enhancement by  
JIST-First Fusing Bilateral and Weighted Least Squares Filters . *In Journal for Imaging, Science &*  
CIC *Technology (JIST-First) and Color and Imaging Conference (CIC)*, Oral.
- 2016 **Vivek Sharma**, Ali Diba, Tinne Tuytelaars, Luc Van Gool. Hyperspectral CNN for Image  
Tech. Report Classification & Band Selection, with Application to Face Recognition.
- 2016 **Vivek Sharma**, Luc Van Gool. Does V-NIR based Image Enhancement Come with Better  
arXiv-Link Features? *CoRR abs/1608.06521*.
- 2016 **Vivek Sharma**, Jose Antonio Oramas Mogrovejo. A Novel Approach for an Interactive  
Tech. Report Hyperspectral Image Segmentation.
- 2016 **Vivek Sharma**, Luc Van Gool. Image-level Classification in Hyperspectral Images using  
arXiv-Link Feature Descriptors, with Application to Face Recognition. *CoRR abs/1605.03428*.
- 2016 **Vivek Sharma**, Şule Yildirim-Yayilgan, Luc Van Gool. Low-Cost Scene Modeling using a  
RO-MAN Density Function Improves Segmentation Performance. *In IEEE RO-MAN*, Oral.
- 2015 **Vivek Sharma**, Şule Yildirim-Yayilgan, Frank Dittrich, Luc Van Gool. Efficient Real-Time  
ICML Pixelwise Object Class Labeling for Safe Human-Robot Collaboration in Industrial Domain.  
*In ICML Workshop: Machine Learning for Interactive Systems*, Oral.
- 2015 **Vivek Sharma**, Frank Dittrich, Şule Yildirim-Yayilgan, Luc Van Gool. Improving Human  
CVPR Pose Recognition Accuracy using CRF modeling. *In IEEE CVPR Workshops*, Poster.
- 2015 **Vivek Sharma**, Frank Dittrich, Şule Yildirim-Yayilgan, Ali Shariq Imran, Heinz Wörn. How  
HCI to tune a Random Forest for Real-Time Segmentation in Safe Human-Robot Collaboration?  
*In International Conference on HCI*, Poster.
- 2015 **Vivek Sharma**, Frank Dittrich, Şule Yildirim-Yayilgan, Heinz Wörn. How does Energy  
EMMCVPR Minimization Improve Recognizing Human Poses for Safe Human-Robot Collaboration? *In*  
*EMMCVPR*, Poster.

- 2014 Frank Dittrich, **Vivek Sharma**, Heinz Wörn, Şule Yildirim-Yayilgan. Pixelwise Object Class Segmentation based on Synthetic Data using an Optimized Training Strategy. *In IEEE ICNSC, Oral.*
- 2012 **Vivek Sharma**. CADaVISION: A Gesture Recognition Simulation. *Institute of Process Tech. Report Control, Automation & Robotics, Karlsruhe Institute of Technology, Germany.*
- 2012 **Vivek Sharma**, Dario Udovicic, Stevan Dordevic, Antonio Lucio. Sensor Fusion for Pedestrian Tracking. *Institute of Industrial Information Technology (IIT), Karlsruhe Institute of Technology, Germany.*

#### Invited Talks

- 2019 Self-Supervised Learning of Face Representations for Video Face Clustering. *In IEEE Automatic Face and Gesture Recognition*, Lille, France.
- 2019 Role of Multispectral Image Fusion for Vision Applications. *OCM SpectroNet Collaboration Conference 2019*, Karlsruhe, Germany.
- 2018 Robust and effective feature representation for robotic and vision applications. Hosted by Anton Milan. *Amazon Research*, Berlin, Germany.
- 2018 Temporal 3D ConvNets using Temporal Transition Layer. *In IEEE Computer Vision and Pattern Recognition (CVPR) Workshop on Brave New Ideas for Video Understanding*, Salt Lake, Utah, USA.
- 2018 Unsupervised Feature Learning for Person Identification. Hosted by Herve Bredin, Camille Guinaudeau, and Claude Barras. *University of Paris-Sud and LIMSIS*, Paris, France.
- 2018 The Choice is Yours: To Enhance or not To Enhance. Hosted by Florent Perronnin and Naila Murray. *NAVER Labs (previously Xerox R&D)*, Grenoble, France.
- 2017 Multi/Hyper-Spectral Imaging Applications in Computer Vision. *3rd Global Summit and Expo on Multimedia & Applications*, Lisbon, Portugal.
- 2016 Pose Estimation & Recognition. Hosted by Daniel Veithen. *Sony Depthsensing Solutions (previously SoftKinetic)*, Brussels, Belgium.
- 2015 Efficient Real-Time Pixelwise Object Class Labeling for Safe Human-Robot Collaboration in Industrial Domain. *In International Conference on Machine Learning (ICML) Workshop on Machine Learning for Interactive Systems (MLIS)*, Lille, France.
- 2015 Multi/Hyper-Spectral Imaging Applications. *SpectroNet International Collaboration Forum*, Jena, Germany.
- 2015 Efficient Real-Time Pixelwise Object Class Labeling for Safe Human-Robot Collaboration in Industrial Domain. *KU Leuven*, Leuven, Belgium.
- 2014 Scene Understanding using Conditional Random Fields for Safe Human Robot Collaboration. Hosted by Ole Jakob Elle. *University of Oslo and Oslo University Hospital*, Ullevål, Norway.
- 2014 Pixelwise Object Class Segmentation based on Synthetic Data using an Optimized Training Strategy. *In IEEE International Conference on Networks & Soft Computing*, Hyderabad, India.
- 2010 Radio Frequency & Identification. *Institute of Electronics & Telecommunication Engineers (IETE), BKBIET*, India.

#### Reviewer

- CVPR ('18,'19), ICCV ('19), ECCV ('18), ICPR ('18), FG ('17,'18), GRSL ('16, '17)

#### Conferences Organized

- 08/02/16 **Annual Symposium in Optics.**  
OSA **SPIE** SPIE/OSA KU Leuven Student Chapter to be held on 8-9th Feb. 2016 in Leuven.
- 16/03/12 **IONS-Germany.**

- OSA **SPIE** Under the OSA KIT CHAPTER Student Branch OSKAR.  
 5/09/10 **Green Earth**.  
 ◆**IEEE** Under the IEEE BKBIET CHAPTER.  
 15/03/10 **Talk on Chandrayan II (Space Vehicle Flight & Launch)**.  
 ◆**IEEE** Under the IEEE BKBIET CHAPTER Student Branch (Region 10).

## Member of Organizations

- 01/15-Now **Student Member**, CVF, Member of Computer Vision Foundation.  
 07/15-1/17 **Representated KU Leuven**, SpectroNet Cross-clustering Collaboration Forum.  
 03/15-09/16 **Vice-President**, SPIE, OSA, KU Leuven Chapter.  
 02/14-09/14 **Student Member**, TEKNA, NTNU Chapter.  
 11/11-10/14 **Technical Leader**, OSKAR(Optics Students Karlsruhe) KIT Chapter OSA, SPIE.  
 03/10-06/11 **Secretary**, IEEE BKBIET CHAPTER.  
 06/08-06/11 **Co-Founder, President**, TECHNORATS, TECHNICAL CLUB, BKBIET.

## Languages

English	<b>Advanced</b>	
German	<b>Intermediate Level B1</b>	<i>Conversationally fluent</i>
Norwegian	<b>Basic</b>	<i>Basic words and phrases only</i>

## Letter of References

NTNU	<b>Assoc. Prof. Dr. Şule Yildirim-Yayilgan</b>	<a href="#">Link-to-PDF</a>
Fraunhofer	<b>Prof. Dr. -Ing. Thomas Längle</b>	<a href="#">Link-to-PDF</a>
KIT	<b>Prof. Dr. -Ing. Heinz Wörn</b>	<a href="#">Link-to-PDF</a>
BKBIET	<b>Assoc. Prof. Lovendra Solanki</b>	<a href="#">Link-to-PDF</a>
BKBIET	<b>Assoc. Prof. Shridhar B. Dandin</b>	<a href="#">Link-to-PDF</a>