

Vivek Sharma

Curriculum Vitae

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Work Experience

3/17-Now



DFG Funded Project: PLUMCOT.

Institute for Anthropomatics and Robotics, CV:HCI Lab, Karlsruhe Institute of Technology (KIT).
Position: Researcher. Employer: Prof. Dr. Rainer Stiefelhagen.

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

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.

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.

Awards

- 2013 **Appreciation.**
Overall topper of first 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.
- 2009 **Best Event Organized Award.**
Awarded for organizing the best event in the Annual Technical Fest "QUASAR".

Conference and Workshops Attended/Organized

Publications

- 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, **Vivek Sharma**, Rainer Stiefelhagen, Luc Van Gool. Object Discovery By Generative arXiv-Link Adversarial and Ranking Networks. *CoRR abs/1711.08174*
- 2018 Ali Diba, Mohsen Fayyaz, **Vivek Sharma**, Amir Hossein Karami, Mohammad Mahdi Arzani, Rahman Yousefzadeh, Luc Van Gool. Temporal 3D ConvNets: New Architecture and Transfer Learning for Video Classification. *CoRR abs/1711.08200*.
- 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*.

⁰The technical reports of the study are available upon request. * contributed equally to the work, and in alphabetical order.

- 2017 **Vivek Sharma**, Jon Yngve Hardeberg, Sony George. RGB-NIR Image Enhancement by Fusing Bilateral and Weighted Least Squares Filters . *In Journal for Imaging, Science & Technology (JIST-First) and Color and Imaging Conference (CIC), Oral.*
- 2016 **Vivek Sharma**, Ali Diba, Tinne Tuytelaars, Luc Van Gool. Hyperspectral CNN for Image Classification & Band Selection, with Application to Face Recognition. Tech. Report
- 2016 **Vivek Sharma**, Luc Van Gool. Does V-NIR based Image Enhancement Come with Better Features? *CoRR abs/1608.06521.* arXiv-Link
- 2016 **Vivek Sharma**, Jose Antonio Oramas Mogrovejo. A Novel Approach for an Interactive Hyperspectral Image Segmentation. Tech. Report
- 2016 **Vivek Sharma**, Luc Van Gool. Image-level Classification in Hyperspectral Images using Feature Descriptors, with Application to Face Recognition. *CoRR abs/1605.03428.* arXiv-Link
- 2016 **Vivek Sharma**, Şule Yildirim-Yayilgan, Luc Van Gool. Low-Cost Scene Modeling using a Density Function Improves Segmentation Performance. *In IEEE RO-MAN, Oral.* RO-MAN
- 2015 **Vivek Sharma**, Şule Yildirim-Yayilgan, Frank Dittrich, Luc Van Gool. Efficient Real-Time Pixelwise Object Class Labeling for Safe Human-Robot Collaboration in Industrial Domain. *In ICML Workshops, Oral.* ICML
- 2015 **Vivek Sharma**, Frank Dittrich, Şule Yildirim-Yayilgan, Luc Van Gool. Improving Human Pose Recognition Accuracy using CRF modeling. *In IEEE CVPR Workshops, Poster.* CVPR
- 2015 **Vivek Sharma**, Frank Dittrich, Şule Yildirim-Yayilgan, Ali Shariq Imran, Heinz Wörn. How to tune a Random Forest for Real-Time Segmentation in Safe Human-Robot Collaboration? *In International Conference on HCI, Poster.* HCI
- 2015 **Vivek Sharma**, Frank Dittrich, Şule Yildirim-Yayilgan, Heinz Wörn. How does Energy Minimization Improve Recognizing Human Poses for Safe Human-Robot Collaboration? *In EMMCVPR, Poster.* EMMCVPR
- 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.* ICNSC
- 2012 **Vivek Sharma**. CADaVISION: A Gesture Recognition Simulation. *Institute of Process Control, Automation & Robotics, Karlsruhe Institute of Technology, Germany.* Tech. Report
- 2012 **Vivek Sharma**, Dario Udovicic, Stevan Dordevic, Antonio Lucio. Sensor Fusion for Pedestrian Tracking. *Institute of Industrial Information Technology (IIIT), Karlsruhe Institute of Technology, Germany.* Tech. Report

Invited Talks

- 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. Talk
- 2017 Multi/Hyper-Spectral Imaging Applications in Computer Vision. *3rd Global Summit and Expo on Multimedia & Applications*, Lisbon, Portugal. Talk
- 2016 Pose Estimation & Recognition. Hosted by Daniel Veithen. *Sony Depthsensing Solutions (previously SoftKinetic)*, Brussels, Belgium. Talk
- 2015 Multi/Hyper-Spectral Imaging Applications. *SpectroNet International Collaboration Forum*, Jena, Germany. Talk
- 2015 Efficient Real-Time Pixelwise Object Class Labeling for Safe Human-Robot Collaboration in Industrial Domain. *KU Leuven*, Leuven, Belgium. Talk
- 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. Talk
- 2010 Radio Frequency & Identification. *Institute of Electronics & Telecommunication Engineers (IETE), BKBIET*, India. Talk

Reviewer

- 2018 CVPR, ICPR
- 2017 FG, GRSL
- 2016 GRSL

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.

Programming Languages

- Matlab
- C, C++, C#
- Deep Learning
- OpenCV
- SQL Server Management Studio
- Linux
- Machine Learning
- Sensors

Languages

- English **Advanced**
 - German **Intermediate Level B1**
 - Norwegian **Basic**
- Con conversationally fluent*
Basic words and phrases only

Letter of References

- NTNU **Assoc. Prof. Dr. Şule Yildirim-Yayilgan** [Link-to-PDF](#)
- Fraunhofer **Prof. Dr. -Ing. Thomas Längle** [Link-to-PDF](#)
- KIT **Prof. Dr. -Ing. Heinz Wörn** [Link-to-PDF](#)
- BKBIET **Assoc. Prof. Lovendra Solanki** [Link-to-PDF](#)
- BKBIET **Assoc. Prof. Shridhar B. Dandin** [Link-to-PDF](#)