Krishna Kanth Nakka *Curriculum vitae*

PERSONAL DETAILS

BC 306, IC Building
Lausanne, Switzerland
1024

+41-787-330-059
krishna.nakka@epfl.ch
Male, DOB: 25 Oct, 1992

Webpage: *krishnakanthnakka.github.io*

EDUCATION

Ecole Polytechnique Fédérale de Lausanne (EPFL) **Sep 2017 - Present**

Pursuing Ph.D. in Computer Science
Advisors: Dr. Mathieu Salzmann and Prof. Pascal Fua

Topic: My research focuses on developing deep architectures that are interpretable and helpful for adversarial attack detection in the context of visual recognition and semantic segmentation. I also work on detecting anomalies in semantic segmentation networks.

Indian Institute of Technology Kharagpur **Jun 2010 - May 2015**

M.Tech with specialization in Signal Processing and Instrumentation,
B.Tech (Honours) in Electrical Engineering (5 year Dual Degree) GPA: 8.89/10.0

EXPERIENCE

Samsung R&D Institute, Bangalore **Sep 2015 - July 2017**
Advanced Technology Lab
Prototyped a joint reflection-removal and super-resolution of a video sequence.

University of Alberta, Edmonton **May 2014 - July 2014**
Under: Prof. Nilanjan Ray, Computing Science Department
Evaluated large scale image retrieval methods using product quantization of sub-codebooks.

University of Queensland, Australia **Nov 2013 - Jan 2014**
Under: Prof. Jeffrey Harmer, Advanced Imaging Lab
Developed an exponentially decaying non-uniform sampling scheme to shorten acquisition time in spectroscopy experiments.

Philips Research Asia, Bangalore **May 2013 - July 2013**
Under: Dr. Shankar M Venkatesan
Implemented a part based human detection model using Adaboost of SVM based weak classifiers.

AWARDS

EDIC Fellowship (2017) to pursue doctoral studies at EPFL.
Mitacs Globalink Scholarship and University of Queensland Summer Research Scholarship
MCM Scholarship for 4 consecutive years for excellent academic performance at IIT KGP

PUBLICATIONS

Conference

1. **Temporally-Transferable Perturbations: Efficient, One-Shot Adversarial Attacks for Online Visual Object Trackers**
   Krishna Kanth Nakka and Mathieu Salzmann,
   preprint available

2. **Towards Robust Fine-grained Recognition by Maximal Separation of Discriminative Features**
   Krishna Kanth Nakka and Mathieu Salzmann,
   Asian Conference on Computer Vision (ACCV), 2020.

3. **Indirect Local Attacks for Context-aware Semantic Segmentation Networks**
   Krishna Kanth Nakka and Mathieu Salzmann,
   European Conference on Computer Vision (ECCV) ***Spotlight 2020. (Top 5%)***

4. **Detecting the Unexpected via Image Resynthesis**
   Krzysztof Lis, Krishna Kanth Nakka, Pascal Fua, Mathieu Salzmann,
   International Conference on Computer Vision (ICCV), 2019.

5. **Interpretable BoW Networks for Adversarial Example Detection**
   Krishna Kanth Nakka and Mathieu Salzmann,
   Explainable and Interpretable AI workshop, ICCV 2019.

6. **Deep Attentional Structured Representation Learning for Visual Recognition**
   Krishna Kanth Nakka and Mathieu Salzmann,
   British Media Vision Conference (BMVC), 2018.

Below listed articles are published during my Master's and Internships

7. **Deep learning based fence segmentation and removal from an image using a video sequence**
   Jonna S, Nakka KK, Sahay RR,
   International Workshop on Video Segmentation, ECCV *2016.* ***Oral.***

8. **My camera can see through fences: A deep learning approach for image de-fencing**
   Jonna S, Nakka KK, Sahay RR,
   Asian Conference on Pattern Recognition ACPR*, 2015.*

9. **Towards an Automated Image De-fencing Algorithm Using Sparsity**
   Jonna S, Nakka KK, Sahay RR,
   International Conference on Computer Vision Theory and Applications, VISAPP 2015.

10. **3D-to-2D mapping for user interactive segmentation of human leg muscles from MRI data**
    Ray N, Mukherjee S, Nakka KK, Acton ST, Blanker SS,
    Signal and Information Processing, GlobalSIP 2014.

Journal

1. **Detection and removal of fence occlusions in an image using a video of the static/dynamic scene**
   Jonna S, Nakka KK, Khasare VS, Sahay RR, Kankanhalli MS,
   Journal of Optical Society of America (JOSA) *A. 2016.*

2. **Non-uniform sampling in EPR: optimizing data acquisition for Hyscore spectroscopy**
   Nakka KK, YA Tesiram, IM Brereton, M Mobli and JR Harmer,
   Physical Chemistry Chemical Physics, 2014.

SKILLS

- Languages: C/C++, Python, MATLAB
- Softwares: PyTorch, Tensorflow, Caffe