Saurav Sharma

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Research Interests

Machine Learning/Deep Learning methods for Computer Vision applications on tasks such as Video, Pose understanding under general scene understanding.

Projects

Project Name	**DenseNet with pre-activated deconvolution for estimating depth map from single image.**
Duration	October, 2016 - April, 2017
Brief Description	This work presents a novel approach for predicting depth image from a single image by exploiting transfer learning technique on the recent DenseNet-161 Convolutional Neural Network architecture. A custom network of deconvolution layers organized in pre-activation style is appended to the DenseNet architecture to increase the spatial resolution of the depth image. The filters in the deconvolution layers are learnable compared to exisiting techniques that uses plain upsampling techniques with no learning. The modified architecture is trained and tested on NYU-V2 depth dataset and implementations are in PyTorch.
Project Name	**A Comparative Analysis Of An Anomaly Detection Algorithm With Neural Networks.**
Duration	April, 2016 - June, 2016
Brief Description	This experiment studies an anomaly detection algorithm using different criterion functions such as normal perceptron, relaxation criterion, Mean Square Error (MSE) and Ho-Kashyap using vanilla SGD. The efficacy of the anomaly detection algorithm is compared with that of a plain neural network with single hidden layer. The experiments are performed on Yahoo anomaly dataset and measured with evaluation metrics such as precision and recall.
Project Name	**A Framework For Pixel Intensity Modulation Based Image Steganography.**
Duration	January, 2016 - March, 2016
Brief Description	This work proposes an adjacent pixel modulation based image steganography algorithm in the spatial domain whose performance is compared with other state of the arts. With enhanced embedding capacity, the resultant stego images from the algorithm minimizes the distortion as compared to other frequency domain algorithms.
Project Name	**Behavior Analysis Of Win32 Applications Using API Hooking.**
Duration	August, 2011 - May, 2012
Brief Description	Implemented an API hooking program for analyzing the behaviour of a normal and a malicious application in terms of type of distinct API calls (including registry calls) made.

Work Experience

Mar 2020 -current	Decision Scientist at INFERENCE LABS , Bengaluru, India Leading end to end cloud native analytics projects in the domain of NLP, Computer Vision
Jul 2019 - Nov 2019	Research Intern at STARS Lab INRIA, Sophia Antipolis, France Worked on Activity recognition and detection tasks for long untrimmed videos using 3D poses and RGB video features. The videos demonstrates Activities of Daily Living (ADL) constrained in an indoor environment. Datasets include Charades, PKU-MMD and one unpublished long duration untrimmed video dataset.

Jun 2017-Apr 2019	Senior Data Analyst at Kantar Analytics, Bengaluru, India Worked on development of machine learning models for prediction and forecasting based on marketing/media data and finding insights from a rich set of media data as per the business requirement.
Jun 2012-Oct 2013	Senior Engineer (Projects) at AGC Networks Limited, Kolkata, India Worked on Implementation of Avaya Voice PBX, Avaya Contact Center and Polycom Video Conferencing Solutions across the government establishments, institutions, public sector companies and private companies.

Education

Aug 2015 - Jun 2017	M.Tech (Master of Technology) **National Institute Of Technology, Rourkela, India** Major: Computer Science and Engineering Advisor: Dr. Pankaj K. Sa CGPA: 9.14/10
Aug 2008 - Jun 2012	B.Tech (Bachelor of Technology) **Tezpur Central University, Assam, India** Major: Computer Science and Engineering Advisor: Dr. Nityananda Sarma CGPA: 7.76/10

Technical Skills

General Programming:	Python, Matlab, C, C++
Databases:	PostGreSQL, MySQL
Frameworks:	PyTorch, Tensorflow, Scikit-learn, Apache-Airflow
Version Systems:	Git, GitLab
Operating Systems:	Linux, Windows
Cloud Systems:	AWS

Publications

1. **Saurav Sharma**, Ram Padhy, Suman Choudhury, Nabarun Goswami, Pankaj Sa. DenseNet with pre-activated deconvolution for estimating depth map from single image. In proceedings of **5th Activity Monitoring by Multiple Distributed Sensing (AMMDS) workshop conducted under BMVC, London, United Kingdom, 7 September 2017**.

2. Srijan Das, **Saurav Sharma**, Imon Mukherjee, Sambit Bakshi. A Framework for Pixel Intensity Modulation Based Image Steganography. In proceedings of **1st International Conference on Advanced Computing and Intelligent Engineering (ICACIE), Odisha, India, 23 December 2016**.

3. Srijan Das, Arpita Dutta, **Saurav Sharma**, Sangharatna Godboley. A Comparative Analysis of a novel Anomaly Detection algorithm with Neural Networks. In press of **International Journal of Rough Sets and Data Analysis (IJRSDA) by IGI Global, October, 2017**.

References

Dr. Francois Bremond	Research Director@STARS	INRIA-Sophia Antipolis, France	francois.bremond@inria.fr
Dr. Sambit Bakshi	Assistant Professor	NIT Rourkela, India	bakshisambit@nitrkl.ac.in
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