HARSH SINHA

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INTERESTS

Domain adaptation, Computer vision, Deep learning, Biometrics

EDUCATION

Birla Institute of Technology and Science, Pilani *GPA :* 8.05/10.0
Master of Engineering, Software Systems 2018 - present
Thesis : Hyperspectral guided Image Dehazing | Dr. Pratik Narang

Birla Institute of Technology and Science, Pilani *GPA :* 7.97/10.0
Bachelor of Engineering (Hons.), Electrical and Electronics Engineering 2013 - 18
Thesis : Deep Learning for Biometrics | Dr. Pawan K Ajmera

Birla Institute of Technology and Science, Pilani *GPA :* 7.97/10.0
Master of Science (Hons.), Chemistry 2013 - 18
Thesis : Emission Properties of triplet harvesting AIE active materials in the reverse micelles of gemini surfactants | Dr. Subit K Saha, Dr. Inamur R Laskar

PUBLICATIONS

A. Mehta, Harsh Sinha, P. Narang and M. Mandal. **"HIDeGAN: A Hyperspectral-guided Image Dehazing GAN"** Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**) Workshops. 2020. *Under Review*

Harsh Sinha, V. Awasthi and P. K Ajmera. **"Audio Classification using Braided Convolutional Neural Networks"** IET Signal Processing. (*Under Major Revision, 2nd Round*) h5-index:23[Link]

Harsh Sinha, S. Kalra and Y. Sharma. **"Text-Convolutional Neural Networks for Fake News Detection in Tweets"** In Frontiers in Intelligent Computing: Theory and Applications. Springer, 2020. h5-index:14[Link]

Harsh Sinha, R. Manekar, Y. Sinha, and P. K Ajmera. **"Convolutional Neural Network-based Human Identification using Outer Ear Images"** In Soft Computing for Problem Solving, pp. 707-719. Springer, 2019. h5-index:13[Link]

Harsh Sinha and P. K. Ajmera. **"Upgrading Security and Protection in Ear Biometrics"** IET Biometrics 8, no. 4 (2019): 259-266. h5-index:23[Link]

Harsh Sinha, S. Srivastava, and Y. Sinha. **"Studying the Role of Kinect as a Multi-Sensory Learning Platform for Children"**. In Proceedings of the 2018 ACM International Joint Conference and 2018 International Symposium on Pervasive and Ubiquitous Computing and Wearable Computers **(UbiComp 2018)**, pp. 251-254. ACM h5-index:57[Link]

POSTER / PRESENTATIONS

Harsh Sinha and Pawan K. Ajmera. **"Interweaving Convolutions: An application to Audio Classification"**. KDD Deep Learning Day, 24th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining **(KDD 2018)**, London. [Link]

Harsh Sinha. **"Developing a movement-based learning platform to enhance physiological, academic and cognitive skills of students"**. National Workshop on Improving Synergy between Teaching and Research in Indian Academia, BITS Pilani, 2018. [Link]

RESEARCH EXPERIENCE

Web Intelligence & Social Computing (WISoC) Group, BITS Pilani
Mentor: Dr. Yashvardhan Sharma — Jan 2019 - May 2019

Extensive experiments were conducted on VMU 2015 dataset finally proposing a text-based CNN to learn semantic word embeddings for fake news detection in tweets.

CSIR - Central Electronics Engineering Research Institute, Pilani
Mentor: Dr. Santanu Chaudhury (Director, IIT, Jodhpur) — July 2018 - Dec 2018

Explored the immense potential of Generative Adversarial Networks (GANs) to generate 31 band hyperspectral images from RGB images employing the idea of neural oscillations to train GANs.

Samsung R&D Institute, Noida
Mentors: Mr. Chetan Chauhan, Mr. Ashish Thakur — Summer 2017

Proposed a Convolutional Encoder Decoder Network for End to End Image Generation using Tensorflow. The architecture was trained to detect blurred region of images in a pixel-by-pixel manner without any external estimation techniques.

CSIR - Central Electronics Engineering Research Institute, Pilani
Mentor: Dr. J. L. Raheja (Chief Scientist, Machine Vision Lab) — Jun 2015 - Feb 2016

Using an input depth map data streams from a kinect sensor, a skeleton-tracking algorithm was applied for fall detection. The relative normalized positions of joints was achieved using a torso-centered coordinate system.

TECHNICAL SKILLS

Languages & Software: PyTorch, TensorFlow, Keras, Python, MATLAB, Java, C, LaTeX
Courses: Object Oriented Analysis and Design, Data Mining, Machine Learning
MOOCs: Machine Learning, Data Science Specialization

PROJECTS

	Reducibility among Combinatorial Problems	Aug 2019 - Oct 2019
	ViSoft: Visualization in Software Testing	Aug 2019 - Oct 2019
Machine Learning	A Variational Training perspective to GANs for Hyperspectral Image Generation	Jan 2018 - Dec 2018
Computer Vision	Detection of Amur Tigers in the Wild	Aug 2019 - Oct 2019
	Query Based Deep Face Image Retrieval	Jan 2019 - May 2019
NLP	Real-time Twitter Sentiment Analysis	Jan 2019 - May 2019
Spring MVC	Estate Security Management System	Jun 2018 - Dec 2018

HONORS & AWARDS

UbiComp 2018 *Travel Grant* — Oct 2018
Awarded a travel reimbursement of USD 600 for UbiComp '18

Microsoft Code.Fun.Do. Finalist Forum — Feb 2016 - August 2016
Runners Up across top 15 universities in India. Developed a Kinect-based learning platform which consisted of multiple games and a dashboard to help specially-abled children overcome difficulties in education. Awarded prizes worth INR 1,00,000.

EXTRA CURRICULAR ACTIVITIES

Johns Hopkins University
Community Teaching Assistant. Responsible for supporting student learning on discussion forums at Coursera for the courses Exploratory Data Analysis and Reproducible Research

Prayag Sangeet Samiti, Allahabad
Sangeet Prabhakar in Tabla. Equivalent to *Bachelor of Music* in Vocal/Instrumental.