Yashasvi Baweja

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EDUCATION

JOHNS HOPKINS UNIVERSITY
PhD in Electrical and Computer Engineering
2019-Present

INDRAPRASTHA INSTITUTE OF INFORMATION TECHNOLOGY-DELHI
B.Tech in Computer Science and Engineering
2015-2019 | GPA: 8.31/10.0

COURSEWORK

GRADUATE
Machine Learning for Signal Processing(A+)
Compressed Sensing(A)
Wavelets and Filter Banks(A)
Vision as Bayesian Inference(A)
Machine Perception(A)

UNDERGRADUATE
Advanced Machine Learning(A)
Statistical Machine Learning(A)
Database Systems Fundamentals(A)
Systems Management(A)
System Administration(A)
Artificial Intelligence(A)
Probability and Statistics(A)

SKILLS

PROGRAMMING
Over 5000 lines:
Python • Pytorch • LaTeX
Over 1000 lines:
MATLAB • Java • Keras
Familiar:
C • C++ • HTML • Tensorflow

SYSTEMS/FRAMEWORKS
Proficient:
Linux, Git, OpenCV, TensorBoard, Scikit-Learn, Visual Studio, PyCharm

LINKS

LinkedIn:// **yashasvi-baweja**
Google Scholar:// **Yashasvi**
Twitter:// **@whybaweja**

EXPERIENCE

NEURORADIOLOGY DIVISION | Research Associate
May'2021 - Sep'2021 | Johns Hopkins Medical Institute, Baltimore, MD
· Improved quality of connectivity maps derived from functional MRI(fMRI) data using deep learning models. ***Submitted to RSNA'21***

VISION & IMAGE UNDERSTANDING LAB | Graduate Researcher
2019 – May'2021 | Baltimore, MD
· Developed a novel training method for face anti-spoofing problems, using only real data, where spoof images are approximated by gaussian distribution [**pdf**].
· Explored ***self-attention based transformer networks*** for incorporating local information in images. *manuscript available on request*

IIIT-D BIOMETRICS LAB | Undergraduate Researcher
2016 – 2019 | New Delhi, India
· Implemented a ***triplet metric learning*** based algorithm for biometric recognition involving cross modal and cross resolution data [**thesis**]
· Achieved state of the art on periocular datasets with proposed algorithm [**link**]

CENTER FOR AI, IIITD | Research Intern
2018 | New Delhi, India
· Led the R&D team responsible for building face recognition system for Yamaha Research, Japan.
· Built & shipped the final product to be fitted at golf carts for personalized greetings.
· Received *conference travel grant* as part of appreciation for the job. ***Skills: PyTorch***

PUBLICATIONS

2020	IJCB	**Y. Baweja**, P. Oza, P. Perera & V. M. Patel. [**pdf**] Anomaly detection-based unknown face presentation attack detection. (***Won audience award for Best Presentation***)
2018	BTAS	R. Garg, **Y. Baweja**, S. Ghosh, R. Singh, M. Vatsa & N. Ratha [**pdf**] Heterogeneity aware deep embedding for mobile periocular recognition. (*equal first author contribution*)
2017	ICMLDS	K. Agrawal, **Y. Baweja**, · · ·(*8 authors*) & V. Dutt [**pdf**] Comparison of Class Imbalance Techniques for Real-World Landslide Predictions

PROJECTS

· Implementation of **Reconstructing Faces from Voices paper** followed by improvement via emotion signals in the generator network. [**code**]
· Implementing **Tomasi-Kanade Factorization method** from scratch for Structure from Motion (**SfM**) [**code**]
· Tweaking Stochastic Gradient Descent (**SGD**) by imposing sparsity to improve optimization for deep learning tasks. [**code**]

AWARDS AND ACHIEVEMENTS

2020	Top 3	Collected 100$ cash prize for best ppt award at IJCB [**ppt**]
2019	Funding	Awarded JHU ECE Dean fellowship for graduate studies
2018	Regional	Selected among top 250 students for Google Intern Connect
2015	National	Secured ∼ 7k rank/1.5 mn+ candidates in JEE Mains
2013	Regional	Awarded bronze medal at local Maths Olympiad