

Yashasvi Baweja

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EDUCATION

JOHNS HOPKINS UNIVERSITY
PHD IN ELECTRICAL AND COMPUTER
ENGINEERING
Aug 2019-Present

**INDRAPRASTHA INSTITUTE OF
INFORMATION TECHNOLOGY-
DELHI**
B.TECH IN COMPUTER SCIENCE AND
ENGINEERING
2015-2019 | GPA: 8.31/10.0

LINKS

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

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

EXPERIENCE

COMPUTER VISION LAB(ECE) | GRADUATE RESEARCHER

Aug 2019 – Present | 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].
· Currently exploring *self-attention based transformer networks* for the same problem.

IIIT-D BIOMETRICS LAB | UNDERGRADUATE RESEARCHER

Aug 2016 – May 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 the proposed algorithm [link]
· Advisor(s): Prof. Richa Singh and Prof. Mayank Vatsa

TEACHING ASSISTANT | COMPUTER VISION

Fall 2019 | IIITD
· Assisted the students and graded their assignments on topics of visual bag of words(BOW), homogeneous coordinates and convolutional neural networks(CNN).
· Gave a lecture on *perspective projection and epipolar geometry*.

CENTER FOR AI, IIITD | RESEARCH INTERN

Summer 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. (<i>Won audience award for Best Presentation</i>)
2018	BTAS	R. Garg, Y. Baweja , S. Ghosh, R. Singh, M. Vatsa & N. Ratha [pdf] Heterogeneity aware deep embedding for mobile periocular recognition. (<i>equal first author contribution</i>)
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	IJCB Audience Choice Best Presentation Award [ppt]
2019	Funding	JHU ECE Dean Graduate fellowship recipient
2018	Regional	Among top 250 students for Google Intern Connect.
2015	National	Secured ~ 7k rank/1.5 mn+ candidates in JEE Mains
2013	Medallist	Bronze medal at local Maths Olympiad