Yashasvi Baweja

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Education

2015 - Present **Indraprastha Institute of Information Technology (IIIT), Delhi, India**
B.Tech, Computer Science and Engineering - CGPA: 8.34/10.0

Coursework Computer Vision, Artificial Intelligence, Statistical Machine Learning, Linear Algebra, Collaborative Filtering, Advanced Programming

2015 **Gyan Bharati School, New Delhi, India**
Senior Secondary School (12th Grade) - Percentage: 95%

Experience

May'17 - Present **Undergraduate researcher** - Image Analysis and Biometrics Lab, **IIIT-Delhi**
Advisers: Dr. Richa Singh and Dr. Mayank Vatsa
· Working on finding an embedding space for face/periocular images for heterogeneous recognition using deep learning.
· The proposed loss equation achieves state-of-the-art results on cross-spectral and cross-resolution tasks.
· ***Part of this work has been submitted to European Conference on Computer Vision(ECCV), 2018 and Biometrics: Theory, Applications, and Systems(BTAS), 2018***.

May'17 - July'17 **Research Intern - Indian Institute of Technology (IIT), Mandi**
Adviser: Dr. Varun Dutt
· Made landslide prediction models for Mandi-Manali route by applying random forests, SVMs and neural networks.
· Used oversampling techniques like SMOTE, SMOTE-ipf to reduce class imbalance in landslide datasets.
· Developed an Arduino based landslide monitoring weather station which is currently in deployment.

June'16 - July'16 **Summer Intern - VlinkInfo Pvt. Ltd., Gurgaon, India**
Worked on revamping a human resource management platform using tools like PHP, Codeigniter, MySQL.

Skills

Software PyTorch, TensorFlow, OpenCV, MATLAB, scikit-learn, Arduino, LaTeX, Git, Linux
Languages Python, C, C++, Java

Projects

Jan'18 - April'18 ***Binary Segmentation of animal images***
A semi-supervised approach to segment the forest images of animals into foreground and background. This reduces the search space for finding the animal only in the foreground. [Slides]

Jan'18 - April'18 ***Automatic Music Generation***
Worked on modelling polyphonic piano data using Hidden Markov Models(HMMs) and compared it's performance with deep learning methods (RNNs) for automatic music generation. [Report]

Jan'16 - April'16 ***Smart Glasses***
A reading tool for the visually impaired made using OpenCV and Tesseract-OCR along with a feature of recognizing acquaintances. Got selected in top 10 course projects and also got featured in Delhi-Mini Maker Faire. [Blog], [Code]

May'17 - June'17 ***Periocular Recognition***
A recognition system for the periocular region I made to get started with biometrics and image processing. Recognized person on the basis of fusioned score of feature matching with LBPs, HOGs & SIFT. [Code]

Aug'17 - Dec'17 ***Multi Heuristic A* (MHA*)***
As a part of the AI course project, compared the performances of search algorithms - MHA* and A* on tile sliding problem, graph traversal(n=400 nodes) and finding the best way for a bus tour in the city. [Code]

All projects available at yashasvi97.github.io/projects.html

Publications

2017 *A Comparison of Class Imbalance Techniques for Real-World Landslide Predictions*; Kapil Agrawal, **Yashasvi Baweja**, Deepti Dwivedi, Ritwik Saha, Prabhakar Prasad, Shubham Agarwal, Sunil Kapoor, Pratik Chaturvedi, Naresh Mali, Venkata Uday Kala and Varun Dutt. [paper], [presentation]
Gave an oral presentation of our work at the International Conference on Machine Learning and Data Science, 2017

Awards & Recognition

· Got recognition letter from MHRD for outstanding performance in class XII examination in 2015.
· Got Bronze Medal in Manav Sthali National Maths Olympiad, India in 2014.