Abhinav Shukla

PhD Student in Computer Science
Intelligent Behaviour Understanding Group
Imperial College London

email: a.shukla@imperial.ac.uk
website: abhinav95.github.io

Interests

Multimodal machine learning, Self-supervised learning, Computer vision, Language, Audio

Education

Imperial College London 2018 - present
PhD in Computer Science
Advised by Prof. Maja Pantic
Thesis title: Learning Self-Supervised Multimodal Representations of Human Behaviour

International Institute of Information Technology, Hyderabad 2017 - 2018
MS in Computer Science by Research
Advised by Prof. Ramanathan Subramanian
Thesis title: Multimodal Emotion Recognition from Advertisements with Application to Computational Advertising

International Institute of Information Technology, Hyderabad 2013 - 2017
BTech in Computer Science and Engineering
Graduated with Honours, GPA 8.78/10.00

Internships

Facebook Reality Labs (FRL) Research Fall 2020, Spring 2021
With Anurag Kumar and Vamsi Krishna Ithapu
Worked on self-supervised audiovisual representation learning in the FRL Research Audio team.

National University of Singapore Fall 2017, Spring 2018
With Prof. Mohan Kankanhalli
Studied multimodal (audio, video, eye-tracking, physiology) affect recognition in advertisement videos. Published in IEEE Transactions on Affective Computing and at ICMI 2018.

Google Summer of Code Summer 2016, 2017
2017: Red Hen Lab, with Prof. Francis Steen and Prof. Mark Turner
2016: CCExtractor, with Carlos Fernandez Sanz

Fellowships, Awards, & Recognition

Samsung PhD Fellowship 2019-2020
IIIT Hyderabad Fast-track Masters thesis (for high quality papers in reputed venues) 2018
IIIT Hyderabad Research award (for publishing as an undergraduate) 2018
ACM SIGCHI Gary Marsden Student Development Fund (to attend ICMI 2018) 2018
Google India Travel Grant (to attend ACM MM 2017) 2017
ACM ICMI 2017 Travel Grant (to attend ICMI 2017) 2017
Dean's Merit List Award for excellence in academics (6 consecutive semesters) 2014-2017

Preprints

[6] **Does Visual Self-Supervision Improve Learning of Speech Representations?**
A. Shukla, S. Petridis, M. Pantic
IEEE Transactions on Affective Computing (*TAFFC*), 2021 (to appear)

Journal Articles

[4] **Recognition of Advertisement Emotions with Application to Computational Advertising**
A. Shukla, S. S. Gullapuram, H. Katti, M. Kankanhalli, R. Subramanian
IEEE Transactions on Affective Computing (*TAFFC*), 2020

Conference Publications

[9] **Learning Self-Supervised Multimodal Representations of Human Behaviour**
A. Shukla
Doctoral Symposium at ACM International Conference on Multimedia (*ACM MM*), *2020*

[5] **Visually Guided Self Supervised Learning of Speech Representations**
A. Shukla, K. Vougioukas, P. Ma, S. Petridis, M. Pantic
International Conference on Acoustics, Speech, and Signal Processing (*ICASSP*), 2020, ***Oral***

[3] **Looking Beyond a Clever Narrative: Visual Context and Attention are Primary Drivers of Affect in Video Advertisements**
A. Shukla, H. Katti, M. Kankanhalli, R. Subramanian
ACM International Conference on Multimodal Interaction (ICMI), 2018, ***Oral***

[2] **Evaluating Content-Centric vs. User-Centric Ad Affect Recognition**
A. Shukla, S. S. Gullapuram, H. Katti, K. Yadati, M. Kankanhalli, R. Subramanian
ACM International Conference on Multimodal Interaction (ICMI), 2017

[1] **Affect Recognition in Ads with Application to Computational Advertising**
A. Shukla, S. S. Gullapuram, H. Katti, K. Yadati, M. Kankanhalli, R. Subramanian
ACM International Conference on Multimedia (ACM MM), 2017, ***Oral***

Workshop Papers

[8] **Learning Speech Representations from Raw Audio by Joint Audiovisual Self-Supervision**
A. Shukla, S. Petridis, M. Pantic
ICML Workshop - Self-Supervision in Audio and Speech, 2020

[7] **Visual Self-Supervision by Facial Reconstruction for Speech Representation Learning**
A. Shukla, S. Petridis, M. Pantic
CVPR Workshop - Sight and Sound, 2020

Invited Talks & Panels

Learning Self-Supervised Multimodal Representations of Human Behavioural Data
Mitsubishi Electric Research Laboratories (MERL) 2021

Self-Supervised Representation Learning in Audiovisual Speech
University of Nottingham 2019

Automatic Understanding of News Videos & CCExtractor
Universität Osnabrück 2017

Relevant Coursework

Computer Vision, Machine Learning, Digital Image Processing
Optimization Methods, Statistical Methods in AI, Digital Signal Processing
Artificial Intelligence, Computer Networks, Advanced Computer Networks, Algorithms

Professional Activities

Reviewing

IEEE Transactions on Affective Computing (TAFFC)	2019, 2020, 2021
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)	2022
IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)	2021
IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)	2021
International Journal of Computer Vision (IJCV)	2021
IEEE International Conference on Automatic Face and Gesture Recognition (FG)	2019
ACM International Conference on Multimodal Interaction (ICMI)	2018

Advising
Saurabh Chand, Masters Student, IIIT Hyderabad 2020

Teaching Experience

ICS251: Computer Networks, IIIT Hyderabad 2016
Teaching Assistant with Prof. Ganesh Iyer

Research Collaborators

Ramanathan Subramanian, University of Canberra
Prof. Maja Pantic, Imperial College London and Facebook London
Stavros Petridis, Imperial College London and Facebook London
Harish Katti, National Institute of Health, Washington DC
Prof. Mohan Kankanhalli, National University of Singapore
Shruti Shriya Gullapuram, Microsoft Redmond
Rodrigo Mira, Imperial College London
Konstantinos Vougioukas, Imperial College London