

Pratyusha Das

Curriculum Vitae

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EDUCATION

Ph.D. in Electrical Engineering 2017-Present
University of Southern California, Los Angeles, CA-90089, USA.

- Advisor: Prof. Antonio Ortega, Electrical Engineering, University of Southern California, USA.

M.E. in Electronics and Telecommunication Engineering (ETCE) 2013-2015
Jadavpur University, Kolkata - 700 032, India.

- CGPA 9.83/10 (University rank 1st).

B.Tech. in Electronics and Communication Engineering (ECE) 2009-2013
West Bengal University of Technology, Kolkata - 700 091, India.

- CGPA 8.94/10.

WORK EXPERIENCE

AI-ML Research Intern Jun, 2021 - Aug 2021
NOKIA Bell Labs, New Jersey, USA

Research Assistant at University of Southern California, Los Angeles, USA 2017-Present
in collaboration with MERL - Mitsubishi Electric Research Laboratories, Massachusetts, USA

Teaching Assistant at University of Southern California, Los Angeles, USA 2019-2020
Linear Algebra for Engineering (EE-510), Applied Linear Algebra for Engineering (EE-141), Pattern Recognition (EE-559), Introduction to Electrical Engineering (EE-105),

Researcher 2015-2017
TCS Research and Innovation Labs, Kolkata, India

CURRENT RESEARCH

Broadly my current research area includes understanding human action using graph based methods like graph signal processing, graph neural network from motion captured data. It also extends to motion capture data compression using graph signal processing.

RESEARCH INTERESTS

Machine learning, Computer vision, Signal processing, Graph signal processing, Pattern recognition, Deep learning, Image processing, Artificial intelligence.

PATENTS

7. Deepan Das, Tanuka Bhattacharjee, Shreyasi Datta, Anirban Dutta Choudhury, **Pratyusha Das** et al., “[System and method for classification and quantitative estimation of cognitive stress](#)”, US Patent App. 15/913,731, Patent Pending.
6. **Pratyusha Das** et al., “Method and system for correcting data captured using a motion sensor”, Filing no. 201621043944, December 22, 2016. Patent Pending.
5. Debatri Chatterjee, **Pratyusha Das** et al., “Method and system for evaluation of online tutorial”, Filing no. 201621039486, November 18, 2016. Patent Pending.
4. Aniruddha Sinha, Debatri Chatterjee, Kingshuk Chakravarty, Rahul Gavas, **Pratyusha Das** et al., “[System and method for digitized symbol substitution test](#)”, Filing no. 201621036029, October 21, 2016. Patent Pending.
3. Aniruddha Sinha, **Pratyusha Das** et al., “System and method for training a model for estimating guess work using physiological sensing”, Filing no. 201621034850, October 12, 2016. Patent Pending.
2. Rahul Gavas, Rajat Gavas, **Pratyusha Das** et al., “[Method and system for determining inactive state and its implication over cognitive load computation of person](#)” , **Patent Granted**.
1. **Pratyusha Das** et al., “[Method and system for monitoring of mental effort](#)” , Patent Pending.

JOURNAL PUBLICATIONS

2. **Pratyusha Das** et al., , “[Improving joint position estimation of Kinect using anthropometric constraint based adaptive Kalman filter for rehabilitation](#)” , *Biomedical Physics & Engineering Express* **vol. 4**, Num 5 (2018).
1. Diptendu Bhattacharya, Amit Konar, **Pratyusha Das**, “[Secondary factor induced stock index time-series prediction using Self-Adaptive Interval Type-2 Fuzzy Sets](#)” , *Neurocomputing* **171**, 551 (2016).

CONFERENCE PUBLICATIONS

16. **Pratyusha Das** et al., ”Application-agnostic spatio-temporal hand graph representations for stable activity understanding”, Accepted in 2021 IEEE International Conference on Image Processing (ICIP).
15. **Pratyusha Das** et al., ”Symmetric Sub-graph Spatio-Temporal Graph Convolution and its application in Complex Activity Recognition”, Accepted in 2021 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP).
14. **Pratyusha Das** et al., ”[Graph-based skeleton data compression](#)” , IEEE 22nd International Workshop on Signal Processing (MMSp 2020).
13. **Pratyusha Das** et al., “[Graph Representations for Unsupervised segmentation of complex activities](#)” , 2019 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP).
12. Deepan Das , Tanuka Bhattacharjee , Shreyasi Datta , Anirban Dutta Choudhury , **Pratyusha Das** et al., “[Classification and quantitative estimation of cognitive stress from in-game keystroke analysis using EEG and GSR](#)” , 2017 IEEE Life Sciences Conference (LSC), 2017.
11. **Pratyusha Das** et al., “[Improvement in Kinect based measurements using anthropometric constraints for rehabilitation](#)” , 2017 IEEE International Conference on Communications (ICC), 2017.
10. Rahul Gavas, Rajat Das, **Pratyusha Das** et al., “[Inactive-State Recognition from EEG Signals and its Application in Cognitive Load Computation](#)” , 2016 IEEE International Conference on Systems, Man, and Cybernetics (SMC), 2017.
9. **Pratyusha Das** et al., “[A System for Remote Monitoring of Mental Effort](#)” , Consumer Electronics-Berlin (ICCE-Berlin), 2016 IEEE 6th International Conference on, pp. 222-226. IEEE, 2016.

8. Aniruddha Sinha, **Pratyusha Das** et al., “Physiological Sensing based Stress Analysis during Assessment”, In Frontiers in Education Conference (FIE), 2016 IEEE, pp. 1-8. IEEE, 2016.
7. Reshma Kar, **Pratyusha Das** et al., “Fuzzy rule enhanced support vector machines for classification of emotions from brain networks”, 2016 2nd International Conference on Control, Instrumentation, Energy and Communication (CIEC). IEEE, 2016.
6. **Pratyusha Das** et al., “Adaptive fuzzy type-I based person identification”, (2015): 106-6.
5. **Pratyusha Das** et al., “Arduino based multi-robot stick carrying by Artificial Bee Colony optimization algorithm”, Computer, Communication, Control and Information Technology (C3IT), 2015 Third International Conference on. IEEE, 2015.
4. **Pratyusha Das** et al. “Adaptive Parameterized AdaBoost Algorithm with application in EEG Motor Imagery Classification”, 2015 International Joint Conference on Neural Networks (IJCNN). IEEE, 2015.
3. Anuradha Saha, Amit Konar, **Pratyusha Das**, et al., “Data-point and Feature Selection of Motor Imagery EEG Signals for Neural Classification of Cognitive Tasks in Car-Driving”, 2015 International Joint Conference on Neural Networks (IJCNN). IEEE, 2015.
2. **Pratyusha Das** et al., “Type 2 fuzzy induced person identification using Kinect sensor”, Fuzzy Systems (FUZZ-IEEE), 2015 IEEE International Conference on. IEEE, 2015.
1. Arup Kumar Sadhu, **Pratyusha Das** et al., “Online Template Matching Using Fuzzy Moment Descriptor”, Advanced Computing, Networking and Informatics-Volume 1. Springer International Publishing, 2014. 275-282.

Complete list [here](#).

ACHIEVEMENTS

- Received “TCS i-Citation Award” (2016 & 2017).
- Honoured with Gold Medals for being the department and University topper in Masters of Engineering 2015, Jadavpur University.
- Received best paper awards in MFIIS 2015 and CIEC 2016.
- Received GATE scholarship from AICTE in 2013.

EXTRA CURRICULUM ACTIVITIES

- Serving as a mentor at [USC WISE](#) mentorship program.
- President at USC recognized student organization [BALAKA](#): Bengali Association of USC.
- Director at USC recognized student organization [VIDUSHAK](#): Improv comedy group of USC.

REFERENCES

1. Prof. Antonio Ortega, Electrical Engineering Dept., University of Southern California, Los angeles 90089 USA, Email: aortega@usc.edu .
2. Prof. Amit Konar, Electronics and Telecommunication Department, Jadavpur University, Kolkata 700 032, India, Email: akonar@etce.jdvu.ac.in, konaramit@yahoo.co.in, Contact no: (+91) 9836156461.