

Sathyaprakash Narayanan

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🔍 Google Scholar

Education

Anna Univeristy; RMD Engineering College, Chennai
Bachelors of Engineering, Electronics and Communication
Cumulative GPA: 8.14/10

2014-2018

Publications

- Real-Time Object Detection and Localization in Compressive Sensing Video
Sathyaprakash Narayanan*, Yeshwanth Ravi Theja*, Venkat Rangan, Anirban Chakraborty, Chetan Singh Thakur
IEEE International Conference on Image Processing (ICIP) 2021.
- N-HAR: A neuromorphic event-based human activity recognition system using memory surfaces
Pradhan Bibhat Ranjan, Yeshwanth Ravi Theja, **Sathyaprakash Narayanan**, Anirban Chakraborty, Chetan Singh Thakur
IEEE International Symposium on Circuits and Systems (ISCAS) 2019.
- Real-time implementation of proto-object based visual saliency model on NVIDIA Jetson TX
Sathyaprakash Narayanan, Yeshwanth Ravi Theja, Chetan Singh Thakur
IEEE International Symposium on Circuits and Systems (ISCAS) 2019.
- A Compressive Sensing Video dataset using Pixel-wise coded exposure
Sathyaprakash Narayanan, Yeshwanth Ravi Theja, Chetan Singh Thakur
arXiv:1905.10054 (arXiv) 2018.

*- equal contribution

Patents

- System and method for ego-centric activity recognition from vehicle on-board neuromorphic cameras
Sathyaprakash Narayanan, Pradhan Bibhat Ranjan, Anirban Chakraborty, Chetan Singh Thakur
US and IN Patent; Application No: IN202141014742
- System and Method for exhale controlled Augmentative and Assistive Communication device for communication and controlling IOT device
Sathyaprakash Narayanan
IN Patent: 201641044496

Work Experience

- **Software Senior Engineer** Oct 2021- Present
PathPartner Interior Sensing Private Limited
Bangalore, India
- **Research Associate** Dec 2017- Sep 2021
NeuRonICS Lab, DESE Department.,
Indian Institute of Science, Bangalore

Real-Time Object Detection and Localization in Compressive Sensing Video
Research Associate under Dr. Chetan Singh Thakur in collaboration with:
Qualcom, USA; tinyVision.ai, USA and IISc, Bangalore

ICIP 2021

- * Object detection and localization can be possible directly in the Compressed Domain.
- * Achieved SOTA 46.27% mAP on a GeForce GTX 1080 Ti with an inference time of 23ms.
- * Deployed on a NVIDIA TX2 embedded board with 45.11% mAP with an inference time of 34ms.

n-EAR: Neuromorphic Ego motion vehicle Activity Recognition

Patent No. IN202141014742

Research Associate under Dr. Chetan Singh Thakur collaboration with:

Wipro Research; IISc, Bangalore

- * A Neuromorphically inspired attention sampling technique
- * A light weight end to end trainable bio-inspired deep learning two stream architecture that bridges the event data and the conventional frame-based data for egocentric vehicle activity recognition
- * Modded CARLA simulator for event-based data generation/ego-motion tracking

N-HAR: A neuromorphic event-based human activity recognition system

ISCAS 2019

Research Associate with Dr. Chetan Singh Thakur and Dr. Anirban Chakraborty, CEDT, IISc

- * First system to achieve the task of human activity recognition based on the event-based camera data
- * Memory surfaces to make the sparse event data compatible with deep convolutional neural networks (CNNs)
- * Achieved SOTA accuracy of 94.3% using event memory surfaces on our activity recognition dataset.

Real-time implementation of proto-object based visual saliency model on NVIDIA TX

ISCAS 2019

Research Associate with Dr. Chetan Singh Thakur in collaboration with Jamal Lottier, JHU

- * Real-Time Biological proto-object visual saliency model
- * Implementation considers the dynamic temporal motion change by convoluting using CUDA
- * We have implemented the model on an NVIDIA Jetson TX1 board

Teaching Assistant and Support for Deep Learning Certificate Program

Dec 2018-Dec 2019

Great Learning, Bangalore

- Responsible for developing content for assignments and in course code-walkthroughs
- Conduct one-to-one online support and doubt clarification sessions
- Review and Evaluate coding assignments

Selected Awards and Honors

- Awarded **Top 20 Innovators of India**, by Intel and DST 2016
- Represented India in **MIT MedHacks**, Yale University, CT, USA 2016
- Represented India in **MIT Loomo hacks**, NTU Singapore 2016
- Among global rank of under 50, Amazon DRS Developer Challenge 2016
- Among global rank of under 100, MediaTek Labs The Future of Smart Homes and Offices 2016
- Awarded **Best Student** by ISTE Chapter 2017
for overall performance in academic and extracurricular activities
- Represented India in **Hack the North at University of Waterloo, Canada** 2017
- Among top 10 in India for Academia-Industry Training(AIT) 2017
Programme by Sine IIT-B and Swissnex India, DST and Zurich University of Applied science
- **Best project of the year**, RMD Engineering College 2018

Responsibilities

Reviewer

- WACV 2019, 2020, 2022
- BMVC 2018