Aditya Vora

CONTACT INFORMATION

B-517, Sycon Cressida, Hormavu
Bengaluru, Karnataka, India - 560043
Birth Date: 06/07/1991

voraaditya898@gmail.com
https://github.com/aditya-vora
Phone: +91-9409335890

RESEARCH INTERESTS

Computer Vision, Deep Learning, Machine Learning

EDUCATION

Indian Institute of Technology, Gandhinagar, Gujarat, India

MTech, Electrical Engineering, May 2017

- Advisor: Dr. Shanmuganathan Raman
- Thesis Topic: *Visual Object Perception problems in Computer Vision*
- **CGPA: 9.0/10**

Birla Vishwakarma Mahavidhyalaya, Vallabh Vidhyanagar, Gujarat, India

B.E. Electronics and Communication, May 2013

- Thesis Topic: *Study and Applications of Medium-Range Non-Radiative Wireless Power Transfer using Magnetic Resonant Coupling*
- **CGPA: 8.27/10 & Rank: 14/132**

PUBLICATIONS

Vora, Aditya, and S. Raman. "Iterative spectral clustering for unsupervised object localization." Pattern Recognition Letters 106 (2018): 27-32. (h5-index 59)

Vora, Aditya, and Shanmuganathan Raman. "Flow-free video object segmentation." National Conference on Computer Vision, Pattern Recognition, Image Processing, and Graphics. Springer, Singapore, 2017. (h5-index 9)

PRE-PRINTS

Vora, Aditya, and Vinay Chilaka. "FCHD: Fast and accurate head detection in crowded scenes." arXiv preprint arXiv:1809.08766. (This work was accepted for publication at IEEE International Conference on Image Processing (ICIP), 2019, Taipei, Taiwan, but because of funding issues it could not be presented) (h5-index 52)

PATENTS

Rajkumar Palanivel, Amit Kulkarni, Douglas Beaudet, Manjuprakash Rama Rao, Atul Laxman Katole, **Aditya Narendrakumar Vora** "*System and Method for identifying blockages of emergency exits in a building.", 2019 (Filed: H215009-US)*

Ashish Tiwari, **Aditya Narendrakumar Vora**, Manjuprakash Rama Rao, Shanmuganathan Raman "*Synthetic human image generation for training person detection AI models.*", 2020 (Under review).

INDUSTRIAL EXPERIENCE

Honeywell Technology Solutions Lab.
Senior Data Scientist Dec, 2018-Present

- Developed a Deep Learning based mask detector (N95/Regular) as a part of "Healthy Buildings" initiative by Honeywell due to COVID-19 pandemic.
- Worked on the design and development of a ML based energy optimization system particularly for hotel rooms. My main contribution was towards designing robust hand crafted features alongwith training an accurate ML model which alongwith being accurate can generalize well to different hotel sites.

- Developed a robust and accurate DL based human detection model for loitering detection in secured premises. Achieved promising results especially for banking applications.
- Face Recognition (FR) technology evaluation for frictionless access in enterprise buildings. Developed a tool to benchmark both in-house as well as 3rd party face detection and FR algorithms (1:N) by adhering to the NIST FRVT evaluation methodology.
- Developed Intel Realsense RGBD sensor based anti-spoofing detection system for detecting real vs. fake faces in a frictionless access system.

Johnson Controls Inc.
Senior Software Engineer June, 2017-Nov, 2018

- Designed and developed computer vision based hand hygiene compliance system for hospitals and battery manufacturing industries using both RGB and Depth streams.
- Developed a fully convolutional head detector for crowded scenes where we proposed an effective receptive field based anchor selection strategy which gave significant boost in accuracy.
- Developed a predictive maintenance model for predicting "false alarms" in a system maintenance test (SMT) for fire intrusion panels.
- Developed deep learning enabled models for crowd detection in surveillance feeds which got deployed in a small village in south of india. This project was a part of "Berkeley-Andhra Smart Village" initiative undertaken by Andhra Pradesh government in India.

Tyco Innovation Garage
Intern July, 2016-Dec, 2016

- Designed, trained and benchmarked 3D CNN based human action recognition model targeted towards retail use-cases. Came up with optimum model design by considering several accuracy and run-time trade-offs.

Unison Electronics
Junior Engineer July, 2013-July, 2014

- Worked on design and development of digital filters and analog circuits, as well as worked on embedded programming.

Academic Research Experience

Indian Institute of Technology, Gandhinagar
MTech, Electrical Engineering June, 2015-June, 2017

- Unsupervised object localization in an image: Proposed a fully unsupervised, iterative spectral clustering based object localization technique which eliminates computationally heavy training step along with achieving good detection results.
- Flow-free video object segmentation: Proposed an algorithm for video object segmentation where we could localize a dynamic object in a scene using a clustering approach, leading to a reduction in overall computation footprint.

Teaching Experience

Indian Institute of Technology, Gandhinagar
Teaching Assistant, Electrical Engineering June, 2015-June, 2017

- Teaching Assistant (TA) in various subjects like Introduction to Programming, Experimental Physics Lab, Digital Logic and Microprocessor lab.

Honors and Awards

- Secured 1st place in Tech Symposium for "SmartView": a multi-site services management solution for SMB project as the best Z21 project.

- Received Silver Award for contribution towards Tech Symposium "SmartView" project.
- Ministry of Human Resource and Development scholarship for pursuing MTech, 2015-2017.
- Secured All India Rank of 938 out of around 172000 students in Graduate Aptitude Test in Engineering conducted by IISc and 7 IITs.

Presentations

Spectral Clustering techniques for Unsupervised Object Localization, Image Processing Symposium, Tyco Innovation Garage team located across USA, Israel, Ireland & India.

Flow-free Video Object Segmentation, national Conference on Computer Vision, Pattern Recognition, Image Processing and Graphics, Indian Institute of Technology, Mandi. (December 2017)

Computer Skills

Languages: Python, C/C++
Tools & Libraries: OpenCV, Matlab, PyTorch

Courses Done

3D Computer Vision, Computational Photography, Articial Neural Networks, Digital Image Processing, Data Mining, Machine Learning, Statistical Signal Analysis, Linear Algebra.

References

Prof. Shanmuganathan Raman,
Associate Professor,
Department of Electrical and Computer Science and Engineering,
Indian Institute of Technology, Gandhinagar
Phone: +91 7433009408
Email ID: shanmuga@iitgn.ac.in

Mr. Manjuprakash Rama Rao,
Director, Architecture and Innovation,
Honeywell Technology Solution Labs,
Bengaluru, Karnataka, India
Phone: +91 9845235994
Email ID: manjuprakash.rao@gmail.com

Dr. Jagadeesh Brahmajosyula,
Manager, Architecture and Innovation,
Honeywell Technology Solution Labs,
Bengaluru, Karnataka, India
Phone: +91 9148598270
Email ID: jagadeesh.brahma@gmail.com