

ALOK SINGH

Research Interests

Video shot boundary detection, Video captioning, Image processing, Machine Learning, Natural Language generation.

Educational Qualification

National Institute of Technology, Silchar
Ph.D, Department of CSE

2019 - current

Advisor: Dr. Thodum Doren Singh and
Prof.Sivaji Bandyopadhyay

National Institute of Technology, Silchar
M.Tech, Department of CSE (8.85 cgpa)

2017-2019

Advisor: Dr. Dalton Meitei Thounaojam

Uttarakhand Technical University, India
B.Tech, College of Engineering Roorkee (73.35%)

2013-2017

Research Activites

Center for Natural Language Processing, NIT Silchar

July, 2019-current

Supervisors: Dr. Thodum Doren Singh and Prof.Sivaji Bandyopadhyay

Ongoing research: Visual Description Generation: bridging a gap between vision and natural language.
The objective of the resaerch is to generate a short natural language description of the action and events occuring in an Image or Video.

Computer Vision Lab, NIT Silchar

July, 2017-2019

Supervisor: Dr. Dalton Meitei Thounaojam

Area of research: Temporal Shot Boundary Detection in the presence of illumination and motion effect in a video.

The objective of the research was to detect abrupt boundaries in a video under illumination and motion effect effectively and efficently.

Academic Activites

Workshop Reviewing:

[ALVR2020](#) (ACL2020), [ALVR2021](#) (NAACL-2021), [MMTLRL2021](#) (RANLP-2021)

Talks/Tutorials:

- Presented a tutorial on “*Visual Description Generation: Fusion of Vision and Natural Language*” in Recent Advance in Machine Translation (RAMT-2021) a worksohp organised by NIT Silchar.

Technical Skills

Programming Language : Python, MATLAB, C.

Framework & Tools : Keras, Pytorch, Tensorflow.

Publications

Journal Papers

1. **Singh, A.**, Singh, T.D. & Bandyopadhyay, S. An encoder-decoder based framework for hindi image caption generation. *Multimed Tools Appl* (2021). <https://doi.org/10.1007/s11042-021-11106-5> (SCIE, IF 2.757)
2. **Singh, A.**, Singh, T.D. & Bandyopadhyay, S. Attention based video captioning framework for Hindi. *Multimedia Systems* (2021). <https://doi.org/10.1007/s00530-021-00816-3> (SCI, IF-1.935)
3. Chakraborty, S., **Singh, A.** & Thounaojam, D.M. A novel bifold-stage shot boundary detection algorithm: invariant to motion and illumination. *Vis Comput* (2021). <https://doi.org/10.1007/s00371-020-02027-9> (SCI, IF -2.601)
4. **Singh, A.**, Thounaojam, D. M., & Chakraborty, S. (2019). *A novel automatic shot boundary detection algorithm: robust to illumination and motion effect*. Signal, Image and Video Processing, 1-9. (SCI, IF 2.157). (Code: <https://github.com/alokssingh/Temporal-segmentation-Shot-boundary>)

Conference Papers

1. **Singh, A.**, Meetei, L.S., Singh, T.D., & Bandyopadhyay, S. *Generation and Evaluation of Hindi Image Captioning of Visual Genome*. In *Proceedings of I3CS 2021* https://doi.org/10.1007/978-981-33-4084-8_7.
2. Chakraborty, S., Thounaojam, D.M., **Singh, A.**, Pal, G., *ALO-SBD: A Hybrid Shot Boundary Detection Technique for video surveillance System*. In *Proceedings of ADCOM 2020* (Accepted Rank- B)

Workshop Papers/ Invited Papers/Preprints/Shared Task:

1. **Singh, A.**, Singh, T.D., & Bandyopadhyay, S. (2020). *NITS-VC system for VATEX Video Captioning Challenge 2020*. Invited Paper in workshop LVVU CVPR 2020 *arXiv preprint* [arXiv:2006.04058](https://arxiv.org/abs/2006.04058)(2020).
2. **Shared Task:** VATEX Video captioning <https://competitions.codalab.org/competitions/24360>

Under Communication:

1. **Singh, A.**, Singh, T. D., & Bandyopadhyay, S. *V2T: Video to Text Framework Using a Novel Automatic Shot Boundary Detection Algorithm*. (Multimedia Tools and Applications)
2. **Singh, A.**, Singh, T. D., & Bandyopadhyay, S. (2020). A Comprehensive Review on Recent Methods and Challenges of Video Description. *arXiv preprint* [arXiv:2011.14752](https://arxiv.org/abs/2011.14752). (ACM Computing Survey)

Datasets:

1. MSR-VTT Hindi video description dataset
 - Available at: <https://github.com/alokssingh/MSR-VTT-captioning>
 - Baseline model: <https://github.com/alokssingh/RMN-MSR-VTT-Hindi-VC>

Codes/Contact Details

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1. Github: <https://github.com/alokssingh>
 2. Website: <https://alokssingh.github.io/>
 3. LinkedIn: <https://www.linkedin.com/in/alokssingh/>