

# ALOK SINGH

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[alokssingh \(Alok singh\) · GitHub](#)

## 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 (8.88 cgpa)

**2017-2019**

**Advisor:** Dr Dalton Meitei Thounaojam

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

**2013-2017**

## Research Activities

**Center for Natural Language Processing, NIT Silchar, India**

**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 research is to generate a short natural language description of the action and events occurring in an Image or Video.

**Computer Vision Lab, NIT Silchar, India**

**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 efficiently.

## Academic Activities

### 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 workshop organised by NIT Silchar. [Online Presentation!]

## 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](https://doi.org/10.1007/978-981-33-4084-8_7).
2. De, P. K., Pankaj, and **Alok Singh**. "A Study of Propagation of Love Waves in an Anisotropic Porous Layer Under Initial Stress." *Recent Trends in Applied Mathematics: Select Proceedings of AMSE 2019*. Springer Singapore, 2021.
3. 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). *A Comprehensive Review on Recent Methods and Challenges of Video Description*. *arXiv preprint arXiv:2011.14752*.
2. **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*(2020). [Online Presentation!]
3. **Shared Task:** VATEX Video captioning <https://competitions.codalab.org/competitions/24360>)  
- In conjunction with CVPR 2020

4. **Ranked first in MSU Shot Boundary Detection Benchmark 2020** challenge organised by Lomonosov MSU Graphics & Media Lab. **Team name: NITS-CV-Lab-v1.0** [Results!][Code!]

#### 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. *Exploiting temporal structure for an efficient video captioning*. (Entertainment Computing)

#### Datasets:

1. MSR-VTT Hindi video description dataset
  - Available at: [alokssingh/MSR-VTT-Hindi-video-captioning](https://github.com/alokssingh/MSR-VTT-Hindi-video-captioning): [This repository contains the MSR-VTT video captioning dataset in Hindi.](#)
  - Baseline model: <https://github.com/alokssingh/RMN-MSR-VTT-Hindi-VC>

#### Codes/Contact Details

1. Github: <https://github.com/alokssingh>
2. Website: <https://alokssingh.github.io/>
3. LinkedIn: <https://www.linkedin.com/in/alokssingh/>
4. Google Scholar: <https://scholar.google.com/citations?user=K6ecfUwAAAAJ&hl=en>
5. ResearchGate: <https://www.researchgate.net/profile/Alok-Singh-97>

#### Referees

- **Dr Thodum Doren Singh:** Assistant Professor in the Department of Computer Science and Engineering at NIT Silchar, India.  
**Email:** thoudam.doren@gmail.com, doren@cse.nits.ac.in  
**Profile:** <http://cs.nits.ac.in/doren/>
- **Prof. Sivaji Bandyopadhyay:** Director of National Institute of Technology Silchar, and Professor in the Department of Computer Science and Engineering at Jadavpur University.  
**Email:** sivaji.cse.ju@gmail.com  
**Profile:** <http://www.jaduniv.edu.in/profile.php?uid=2>
- **Dr Dalton Meitei Thounaojam:** Assistant Professor in the Department of Computer Science and Engineering at NIT Silchar, India.  
**Email:** dalton.meitei@gmail.com  
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