

ALOK SINGH

alok.rawat478@gmail.com
Contact: +91-8476815804
Address: Kotdwara Uttarakhand, India

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

Research Interests

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

Educational Qualification

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

2019 - 2022

Advisor: Dr Thoudam 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

Work Experience

Research Associate in Machine Learning
(Sustainable finance group)

University of Oxford
Nov 2022-current

Research Activities

Center for Natural Language Processing, NIT Silchar, India

July 2019-2022

Supervisors: [Dr Thoudam Doren Singh](#) and [Prof.Sivaji Bandyopadhyay](#)

Ongoing research: Visual Description Generation: bridging a gap between vision and natural language.
The research aims 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)

Journals:

[Multimedia Tools and Applications](#), [Applied Intelligence](#), [Applied Artificial Intelligence](#), [Imaging Science Journal](#)

Conference:

[ICON-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. V2T: video to text framework using a novel automatic shot boundary detection algorithm. *Multimed Tools Appl* (2022). (SCIE, IF-2.757)
2. **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)
3. **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)
4. 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)
5. **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). <https://doi.org/10.1007/s11760-019-01593-3> [[Code!](#)]

Conference Papers

1. 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 2022* https://doi.org/10.1007/978-981-19-0019-8_51

2. **Singh, A.,** Meetei, L. S., Singh, S.M., Singh, T.D., & Bandyopadhyay, S. An efficient keyframes selection based framework for video captioning. *In Proceedings of the International Conference on Natural Language Processing ICON-2021 (Accepted)*
3. Meetei, L. S., Singh, S.M., **Singh, A.,** Singh, T.D., & Bandyopadhyay, S. An Experiment on Speech-to-Text Translation Systems for Manipuri to English on Low Resource Setting. *In Proceedings of the International Conference on Natural Language Processing ICON-2021 (Accepted)*
4. Singh, S.M., Meetei, L. S., **Singh, A.,** Singh, T.D., & Bandyopadhyay, S. On the Transferability of Massively Multilingual Pretrained Models in the Pretext of the Indo-Aryan and Tibeto-Burman Languages. *In Proceedings of the International Conference on Natural Language Processing ICON-2021 (Accepted)*
5. **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.
6. 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.

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 *LIVU CVPR 2020 arXiv preprint arXiv:2006.04058* (2020). [[Online Presentation!](#)]
3. **Shared Task:** VATEX Video captioning - In conjunction with CVPR 2020 [[Result!](#)]
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!](#)]

Datasets:

1. MSR-VTT Hindi video description dataset
 - Available at: [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: [Alok Singh](#)
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 Thoudam 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 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 Computer Science and Engineering Department at NIT Silchar, India.
Email: dalton.meitei@gmail.com
Profile: <http://cs.nits.ac.in/dalton/>