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Work Experience

- April 2018 – August 2018 **SNV Nepal, Junior Program officer** Contributed on Water, Sanitation and Hygiene project for the sensitization, monitoring and implementation of the program.
- July 2016 – March 2018 **ICIMOD, Research Assistant** Worked on installation of black carbon monitoring station in glacierized place [Langtang-Nepal]. Contributed in workshop and Science Policy Dialogue: Air Pollution, Climate, and Health in South Asia and the Hindu Kush Himalaya. Involved in research paper writing about Black Carbon [BC] aerosol source, sink, their optical and physical properties, radiative forcing, heating rate and its implication.
- January 2015–March 2016 **MinErgy Pvt.Ltd., Research Assistant** Provided technical inputs on gaseous pollutants measurement campaign. Assisted program coordinator for finalizing emission monitoring project






Education

- September 2018 – June 2022 **PhD, University of Chinese Academy of Science** Analysis of aerosols transport, radiative perturbation and contribution using **WRF-Chem**
Thesis title: *Tracing aerosol concentrations, transport mechanism, and radiative perturbation over Pan-Third Pole region using multi-sensors satellite and models*
- June 2015 – August 2017 **M.S by Research in Glaciology** Estimation of aerosol optical properties using **SBDART** and **OPAC** models
Thesis title: *Aerosol radiative forcing estimation over a remote high-altitude location (4900 masl) near yala glacier, nepal.*
- February 2011 – January 2013 **M.Sc in Environmental Science** Climate Change and pollution control





Research Publications

Journal Articles

- 1 Hu, Y., Kang, S., Yang, J., Chen, X., Ji, Z., & **Rai, M.** (2022). Transport of black carbon from central and west asia to the tibetan plateau: Seasonality and climate effect. *Atmospheric Research*, 267, 105987.
doi:<https://doi.org/10.1016/j.atmosres.2021.105987>
- 2 Li, C., Yan, F., Zhang, C., Kang, S., **Rai, M.**, Zhang, H., ... He, C. (2022). Coupling of decreased snow accumulation and increased light-absorbing particles accelerates glacier retreat in the tibetan plateau. *Science of The Total Environment*, 809, 151095.
doi:<https://doi.org/10.1016/j.scitotenv.2021.151095>
- 3 Maharjan, L., Kang, S., Tripathi, L., Gul, C., Zheng, H., Li, Q., ... Santos, E. (2022). Atmospheric particle-bound polycyclic aromatic compounds over two distinct sites in pakistan: Characteristics, sources and health risk assessment. *J Environ Sci (China)*, 112, 1–15. doi:[10.1016/j.jes.2021.04.024](https://doi.org/10.1016/j.jes.2021.04.024)

- 4 Gul, C., Mahapatra, P. S., Kang, S., Singh, P. K., Wu, X., He, C., ... Puppala, S. P. (2021). Black carbon concentration in the central himalayas: Impact on glacier melt and potential source contribution. *Environmental Pollution*, 275, 116544.  doi:https://doi.org/10.1016/j.envpol.2021.116544
 - 5 Rupakheti, D., Rupakheti, M., Yin, X., Hofer, J., **Rai, M.**, Hu, Y., ... Kang, S. (2021). Modifications in aerosol physical, optical and radiative properties during heavy aerosol events over dushanbe, central asia. *Geoscience Frontiers*, 12(6), 101251.  doi:https://doi.org/10.1016/j.gsf.2021.101251
 - 6 Rupakheti, D., Yin, X., Rupakheti, M., Zhang, Q., Li, P., **Rai, M.**, & Kang, S. (2021). Spatio-temporal characteristics of air pollutants over xinjiang, northwestern china. *Environmental Pollution*, 268, 115907.  doi:https://doi.org/10.1016/j.envpol.2020.115907
 - 7 Tripathee, L., Gul, C., Kang, S., Chen, P., Huang, J., & **Rai, M.** (2021). Transport mechanisms, potential sources, and radiative impacts of black carbon aerosols on the himalayas and tibetan plateau glaciers, 7–23.  doi:10.1007/978-3-030-70509-1_2
 - 8 **Rai, M.**, Mahapatra, P. S., Gul, C., Kayastha, R. B., Panday, A. K., & Puppala, S. P. (2019). Aerosol radiative forcing estimation over a remote high-altitude location (4900 masl) near yala glacier, nepal. *Aerosol and Air Quality Research*, 19(8), 1872–1891.  doi:10.4209/aaqr.2018.09.0342
1. **Rai, M.**, Kang, S., Yang, J., Chen, X., Hu, Y., Rupakheti, D. (2022) Tracing atmospheric anthropogenic black carbon and its potential radiative response over Pan-Third Pole region: a synoptic-scale analysis using WRF-Chem => **Accepted in Journal of Geophysical Research-Atmosphere**
 2. **Rai, M.**, Kang, S., Yang, J., Chen, X., Hu, Y., Rupakheti, D., Tripathee, L., Rupakheti, M. (2022) Insight into seasonal aerosols concentrations, transport and meteorological influence over Pan-Third Pole region using multi-sensors satellite, WRF-Chem, and IPART => **In preparation**

Skills

Languages	 English, Nepalese, Kiranti, Mandarin Chinese.
Programming/Others	 Python, R, Matlab, Linux, NCL, CDO
Models/Tools	 WRF-Chem, HYSPLIT/PySPLIT, SBDART, OPAC, ArcGis, TrajStat
Misc.	 Academic research, High performance computing, Satellite data handling, L ^A T _E X, publishing.




Training and Conferences

12-15 January 2016	 Data Analysis with R Organised by ICIMOD, Nepal
18-22 January 2016	 Application of Remote Sensing and GIS for Mapping and Monitoring of Glaciers Organised by ICIMOD, Nepal
21-25 November 2016	 Air Quality Instrument Operation and Maintenance Organised by ICIMOD, Nepal
23-24 October 2016	 Field Techniques and Data Tools for Monitoring High Mountain Environments Organised by University of Zurich, Switzerland
12-23 August, 2019	 Climate Change and Social Impact on the Third Pole Organiseg by TPE, TranTip, China
28–30 August, 2019	 International forum on the cryosphere and society The voice of the Hindu Kush Himalaya Organiseg by ICIMOD, Nepal

Training and Conferences (continued)

- 22 October 2020  **NASA'S Applied Remote Sensing Training Program on MODIS to VIIRS Transition for Air Quality Applications**
Organised by NASA
- 16 Jan, 2020  **Winter School on Frontier and Interdisciplinary Science**
Organised by International School of UCAS, China
- 13-17 September 2021  **Capacity Development Program on Air Quality Management and Emission Reduction on PM_{2.5} for Asian Countries**
Organised by Regional Resource Centre for Asia and the Pacific, Thailand
- 22 October 2021  **Atmospheric Chemistry and Aerosols in the Asian Monsoon region using Satellite and Model data**
Organised by ACAM, ICIMOD, ECMWF, EUNETSAT
- 06 June 2021  **Air Quality using Copernicus Sentinel data**
Organised by WEKEO, Mercator Ocean International
- July 2021  **4th Congress of China Geodesy and Geophysics**
Organised by Maritime Silk Road and Earth System Sciences, Qingdao, China

Awards and Achievements

- 2018  **President's Fellowship**, CAS-TWAS President's Fellowship awardee, Trieste, Italy
- 2015  **M.S Thesis grant**, Cryosphere Monitoring Project (CMP) fellowship, Norwegian Embassy and ICIMOD-Nepal
- 2013  **M.Sc Thesis grant**, Grant from SEAM-Nepal/Government of Finland.

References

Prof. Dr. Shichang Kang

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