DIPAK PRASAD UPADHYAYA, MPH

DATE: November 17, 2024
PERSONAL INFORMATION

Name: Upadhyaya, Dipak Prasad

Education

School: Case Western Reserve University, School of Medicine
Degree: Ph.D. in Biomedical and Health Informatics
Dates: August 2020- Ongoing

School: Tribhuvan University, Institute of Medicine
Degree: Master of Public Health
Dates: 2015-2017

School: Tribhuvan University, Institute of Medicine
Degree: Bachelor's Degree in Public Health (BPH)
Dates: 2010-2012

Contact Information

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PROFESSIONAL APPOINTMENTS

Position/Rank:	Graduate Research Assistant
Institution/Department:	Case Western Reserve University, Department of Population and Quantitative Health Sciences, OH
Dates:	August-2020-Present
Position/Rank:	Lecturer
Institution/Department:	Tribhuvan University, Central Department of Public Health, Kathmandu, Nepal
Dates:	July 2019-Aug 2020
Position/Rank:	Lecturer
Institution/Department:	Karnali College of Health Sciences, Kathmandu, Nepal
Dates:	July 2019-Aug 2020

Position/Rank:	Nutrition Officer
Institution/Department:	Food and Agriculture Organization of the United Nations, Lalitpur, Nepal
Dates:	2014- April 2015

Position/Rank:	Community Health Quality Improvement Officer
Institution/Department:	Jhpiego /Health For Life/USAID, Lalitpur, Nepal
Dates:	April 2013- October 2014

AWARDS AND SCHOLARSHIPS

- **PhD Dean's Scholarship**, School of Medicine, Case Western Reserve University, 2020
- **First prize Poster Presentation,** 5th Annual Scientific Symposium on Agriculture-Nutrition Pathways 2017
- **College Scholarship for studying Master of Public Health**, Institute of Medicine, Maharajgunj Campus, Nepal in 2015
- **College Scholarship for studying Bachelors' Degree in Public Health**, Institute of Medicine, Maharajgunj Campus, Nepal in 2009

MEMBERSHIP IN PROFESSIONAL SOCITIES

- American Medical Informatics Association (AMIA), Member, 2022-present
- Life member- Nepal Public Health Association, Kathmandu, Nepal
- Nepal Health Professional Council, Kathmandu, Nepal Registration No: 753 Jan PH (MPH of Specialization level)

Editorial Boards

Journals: Frontiers in Public Health (Infectious Diseases: Epidemiology and Prevention
Dates of Services: 2022
Role: Review Editor

Journals: The MedS Alliance Journal of Medicine and Medical Sciences (MJMMS)
Dates of Services: 2021
Role: Review Editor

Journal Reviewer

- PLOS ONE
- Frontiers in Big Data
- American Medical Informatics Association Symposium Reviewer
- International Journal of Public Health
- Scientific Report
- BMC Public Health

Peer-Reviewed, Full-length Articles (Google Scholar**)**

1. **Upadhyaya, D. P.,** Tarabichi, Y., Prantzalos, K., Ayub, S., Kaelber, D. C., & Sahoo, S. S. (2024). Machine learning interpretability methods to characterize the importance of hematologic biomarkers in prognosticating patients with suspected infection. *Computers in Biology and Medicine*, 183, 109251. https://doi.org/10.1016/j.compbiomed.2024.109251
2. **Upadhyaya, D. P**., Shaikh, A. G., Cakir, G. B., Prantzalos, K., Golnari, P., Ghasia, F. F., & Sahoo, S. S. (2024). A 360° view for large language models: Early detection of amblyopia in children using multi-view eye movement recordings. In J. Finkelstein, R. Moskovitch, & E. Parimbelli (Eds.), *Artificial Intelligence in Medicine. AIME 2024. Lecture Notes in Computer Science* (Vol. 14845, pp. 165–175). Springer, Cham. https://doi.org/10.1007/978-3-031-66535-6_19
3. **Upadhyaya, D. P.**, Prantzalos, K., Golnari, P., Shaikh, A. G., Sivagnanam, S., Majumdar, A., Ghasia, F. F., & Sahoo, S. S. (2024). Explainable Artificial Intelligence (XAI) in the era of large language models: Applying an XAI framework in pediatric ophthalmology diagnosis using the Gemini model. In AMIA 2025 Informatics Summit **(Accepted)**. American Medical Informatics Association, Pittsburgh, Pennsylvania, USA, March 10–13, 2025.
4. Prantzalos, K., **Upadhyaya, D. P.**, Golnari, P., Fernandez-BacaVaca, G., Aispuro, G. P., Salehizadeh, S., Thyagaraj, S., Gurski, N., & Sahoo, S. S. (2024). Neural Mosaics: Detecting Aberrant Brain Interactions using Algebraic Topology and Generative Artificial Intelligence. In AMIA 2024 Annual Symposium **(Accepted).** American Medical Informatics Association, San Francisco, CA, November 9–13.
5. Sanchez, E., **Upadhyaya, D. P.,** Cakir, G. B., Shaikh, A., Stefano, R., Sahoo, S., & Ghasia, F. (2024). Machine learning, artificial intelligence, and eye movements: Utility in detection of amblyopia [Abstract]. *Investigative Ophthalmology & Visual Science*, **65**(7), 4301. https://iovs.arvojournals.org/article.aspx?articleid=2795260
6. Prantzalos, K., **Upadhyaya, D.,** Shafiabadi, N., Fernandez-Baca Vaca, G., Gurski, N., Yoshimoto, K., Sivagnanam, S., Majumdar, A., & Sahoo, S. S. (2024). MaTiLDA: An integrated machine learning and topological data analysis platform for brain network dynamics. *Pacific Symposium on Biocomputing*, **29**, 65–80. https://doi.org/10.1142/9789811286421_0006
7. Sivagnanam, S., Yeu, S., Lin, K., Sakai, S., Garzon, F., Yoshimoto, K., Prantzalos, K., **Upadhyaya, D. P.,** Majumdar, A., Sahoo, S. S., & Lytton, W. W. (2024). Towards building a trustworthy pipeline integrating Neuroscience Gateway and Open Science Chain. *Database: The Journal of Biological Databases and Curation*, 2024, baae023. https://doi.org/10.1093/database/baae023
8. Poudyal, A. K., Shakya, K. L., Sapkota, V. P., Paudel, R., Myia, S. D., Pradhan, P. M. S., **Upadhyaya, D. P.,** Joshi, N., & Shrestha, S. (2024). Epidemiological and spatial distribution of COVID-19 morbidity and mortality in Nepal. *Journal of Nepal Health Research Council*, 22(2), 252–257. http://www.jnhrc.com.np/index.php/jnhrc/article/view/4775
9. Sharma, M., Khatri, B., Amatya, A., Subedi, N., **Upadhyaya, D. P.,** Sapkota, B. P., & Bista, P. (2023). Utilization of adolescent friendly health services and its associated factors among higher secondary students in mid-western Himalayan mountainous district

of Nepal. *PLOS Global Public Health*, **3**(3), e0001616. https://doi.org/10.1371/journal.pgph.0001616

10. Sahoo, S. S., Kobow, K., Zhang, J., Buchhalter, J., Dayyani, M., **Upadhyaya, D. P.,** Prantzalos, K., Bhattacharjee, M., Blümcke, I., Wiebe, S., & Lhatoo, S. D. (2022). Ontology-based feature engineering in machine learning workflows for heterogeneous epilepsy patient records. *Scientific Reports*, **12**(1), 19430. https://doi.org/10.1038/s41598-022-23101-3
11. Thapa, P., Poudyal, A., Poudel, R., **Upadhyaya, D. P.,** Timalsina, A., Bhandari, R., & Adhikari, N. (2022). Prevalence of low birth weight and its associated factors: Hospital-based cross-sectional study in Nepal. *PLOS Global Public Health*, **2**(11), e0001220. https://doi.org/10.1371/journal.pgph.0001220
12. Adhikari, N., Acharya, K., **Upadhya, D. P.,** Pathak, S., Pokharel, S., & Pradhan, P. M. S. (2021). Infant and young child feeding practices and its associated factors among mothers of under two years children in a western hilly region of Nepal. *PLOS ONE*, **16**(12), e0261301. https://doi.org/10.1371/journal.pone.0261301
13. Adhikari, M., Paudel, N. R., Mishra, S. R., Shrestha, A., & **Upadhyaya, D. P.** (2021). Patient satisfaction and its socio-demographic correlates in a tertiary public hospital in Nepal: A cross-sectional study. *BMC Health Services Research*, **21**(1), 135. https://doi.org/10.1186/s12913-021-06155-3
14. **Upadhyaya, D. P.,** Paudel, R., Acharya, D., Khoshnood, K., Lee, K., Park, J. H., Yoo, S. J., Shrestha, A., Bc, B., Bhandari, S., Yadav, R., Timalsina, A., Wagle, C. N., Das, B. K., Kunwar, R., Chalise, B., Bhatta, D. R., & Adhikari, M. (2020). Frontline healthcare workers' knowledge and perception of COVID-19, and willingness to work during the pandemic in Nepal. *Healthcare*, **8**(4), 554. https://doi.org/10.3390/healthcare8040554
15. Adhikari, M., Chalise, B., Bista, B., Pandey, A. R., & **Upadhyaya, D. P.** (2020). Sociodemographic correlates of antenatal care visits in Nepal: Results from Nepal Demographic and Health Survey 2016. *BMC Pregnancy and Childbirth*, 20(1), 513. https://doi.org/10.1186/s12884-020-03218-x
16. Paudel, R., Gurung, Y. B., Poudyal, A. K., Khatri, B., Bhatta, D. R., Acharya, D., Singh, J. K., Adhikari, M. R., Sapkota, R., Mahotra, N. B., & **Upadhyaya, D. P.** (2020). Socio-demographic and healthcare-seeking predictors of undernutrition among children under-five years of age in a western district of Nepal. *Journal of Nepal Health Research Council*, 18(3), 488–494. https://doi.org/10.33314/jnhrc.v18i3.2875
17. Timalsina, A., Paudel, R., **Upadhyaya, D. P.,** Bhattacharya, S., Kuikel, B. S., Joshi, N. P., Acharya, D., Adhikari, N., & Bhandari, R. (2021). Predictors of multiple micronutrient powder intake adherence among children aged 6–23 months in Rasuwa District, Nepal: A cross-sectional study. *Journal of the Institute of Medicine*, **43**(2), 69–75. https://www.nepjol.info/index.php/JIOM/article/view/37542
18. Paudel, R., & **Upadhyaya, D. P.** (2020). Initiation of contact tracing for COVID-19 at an academic institution for health science: Initial experiences. *Journal of Chitwan Medical College*, **10**(3), 109–110. https://doi.org/10.3126/jcmc.v10i3.32068

Under Review or Revision

1. **Upadhyaya, D. P.**, Cakir, G., Ramat, S. S., Albert, J., Shaikh, A., Sahoo, S. S., & Ghasia, F. (2024). A Multi-Head Attention Deep Learning Algorithm to Diagnose Patients with Amblyopia for Early Intervention using Fixation Eye Movement [Under review].
2. **Upadhyaya, D. P.,** Prantzalos, K., Thyagaraj, S., Yoshimoto, K., Sivagnanam, S., Majumdar, A., Sahoo, S.S., (2023). Machine Learning Interpretability Methods to Characterize Brain Network Dynamics using Intracranial EEG Recordings in Epilepsy.

Invited Talks and Oral Presentation

1. A 360 Degree View for Large Language Models: Early Detection of Amblyopia in Children using Multi-View Eye Movement Recordings**,** 22nd International Conference, AIME 2024, July 9–12, 2024, Salt Lake City, UT, USA.
2. Helios: A Platform for Early Childhood Amblyopia Detection Using Fixation Eye Movements. AMIA 2024 Annual Symposium (Poster). American Medical Informatics Association, November 9–13, San Francisco, CA, USA.
3. Current Research in Biomedical & Health Informatics: Monocyte Distribution Width in Severe Sepsis Prediction, Case Western Reserve University, School of Medicine, Department of Population & Quantitative Health Sciences**,** March 10, 2023.
4. Frontline healthcare workers' knowledge and perception of COVID-19 and willingness to work during the pandemic in Nepal: a nationwide cross-sectional web-based study**.** Sixth National Summit of Health and Population Scientists in Nepal, 6-7 July 2020, Katmandu, Nepal.
5. Is Dietary Diversity Associated with Anemia during Pregnancy in Nepal? Fifth Annual Scientific Symposium on Agriculture-Nutrition Pathways, 9-13, July 2017, Kathmandu, Nepal.

Technical Skills

- **Programming Languages and web framework**: Python, R, MATLAB, Django
- **Machine Learning**: TensorFlow, scikit-learn, PyTorch
- **Statistical Analysis**: SPSS, SAS