Ishwor Poudyal
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Education

PhD in Physics	2014-2020
University of Wisconsin-Milwaukee (UWM)	
MSc in Physics (Solid State Physics)	2010-2013
Central Department of Physics, Tribhuvan University, Kathmandu, Nepal	
BSc in Physics (Major: Physics, Minor: Mathematics, Statistics**)**	2007-2010
Trichandra Multiple Campus, Tribhuvan University, Kathmandu, Nepal	

Experience

TD Mod and Integration Yield Engineer | Intel Corporation Dec.2022 –current

Postdoctoral Research Associate | Argonne National Laboratory Feb. 2021 – Nov. 2022
- Mathematical Formulation based on Fourier-optics and Simulation of lens-based coherent X-ray scattering.
- Experimental design of coherence-enhanced dark-field X-ray microscopy techniques at Sector 6-IDC, Advanced Photon Source (APS).
- Testing and troubleshooting hardware configurations of instruments used for X-ray diffraction experiments.
- Operating and aligning a diffractometer. Supporting users during beamtime at Sector 6-IDC.
- Mentored an undergraduate student within SULI program.

Research Associate | UWM May 2015 – Feb. 2021
- Analyzed X-ray Free Electron Lasers (XFELs) crystallographic data during experiments (multiple beam times) at SLAC National Accelerator Laboratory, Menlo Park USA, EuXFEL Hamburg Germany, SACLA Japan.
- Extensive experience in expression, purification, and crystallization of the protein.
- Extensive experience in crystallographic and single-particle diffraction data analysis.
- My work focuses on data analysis of single particle imaging from biological entities. Part of my project was related to single-particle diffraction pattern simulation, merging of diffraction patterns into a 3D diffraction volume and use iterative phasing algorithm to reconstruct the electron density. We have also applied manifold embedding based on the diffusion map algorithm to sort single hits from the XFELs dataset.
- Experience in analyzing and interpreting large data sets to develop data-driven recommendations.
- Published results in peer-reviewed journal papers and presented research at international conferences. Poster presentation at funding agency annual review meeting.

Teaching Assistant | UWM   August 2014 – May 2020
- Teaching is an important part of the doctoral program at UWM. I have taught weekly discussion sections for PHY-120, PHY-210 and lab courses for PHY-108, PHY-121, PHY-215, as a graduate teaching assistant.
- As a part of teaching assistant, I also support instructor with test administration and assignment grading. I also cover professor's classes when needed in the 4th year undergraduate electrodynamics courses.

MSc Research | Tribhuvan University   October 2012 - August 2014
- Studied transport properties of carbon monoxide in water applying molecular dynamics simulation using GROMACS. Acquired student research grant from University Grants Commission (UGC), Nepal, 2014 to conduct a master's dissertation work.

Academic Awards

- Recipient of a UWM Chancellor's Graduate Student Award in Fall 2014, Fall 2015, Fall 2016, Spring 2017, Fall 2017, Spring 2018, Fall 2019.
- Recipient of a Research Excellence Award from the UWM Department of Physics in Fall 2014, Spring 2016, Spring 2017, Spring 2018, Fall 2019.
- Awarded a grant from University Grants Commission (UGC), Kathmandu, Nepal for a Master's Thesis.
- Awarded the Golden Jubilee Scholarship 2006-07 from Government of India.

Skills

- Algorithm development, Lens-based X-ray Imaging, Fourier Optics, Computational Structural Biology, Single Particle Diffraction Imaging, Image Reconstruction, Crystallographic Data Analysis and Refinement, Protein Expression, Purification, and Crystallization.

- **Programming Language**: Use Python, Matlab, Mathematica, and Bash script extensively for research related work and have a working knowledge on Java and C++.

- **Software**: Crystallographic Softwares (CCP4, Coot, Phenix, Chimera), GROMACS.