

Ruby Shrestha

Contact Information	LinkedIn: www.linkedin.com/in/ruby--shrestha Rochester, NY 14623 USA rs9466@rit.edu	
Research Interests	Deep learning, Generative models, Counterfactual data augmentation, Fairness & distributional robustness of deep learning models	
Education	PhD, Computing and Information Sciences	2022-Present
	Rochester Institute of Technology, Rochester, NY, USA Advisor: Dr. Linwei Wang Relevant Courses: Quantitative Foundations, Deep Learning, Statistical Machine Learning, Non-convex Optimization, Data Science & Analytics, Visual Analytics GPA (3.72/4.00)	
Honors & Awards	B.Sc., Computer Science and Information Technology	2013-2017
	Tribhuvan University, Nepal	(84.14%)
	Dr. Russell and Melissa Bessette Award for Doctoral Student Excellence	2023
	Rochester Institute of Technology, Rochester, NY, USA	
	National Female Education Award	2019
	<i>Native Name: Nepal Chhatra Bidhya Padak</i> Ministry of Education, Science and Technology, Government of Nepal	
Technical Skills	Academic Excellence Award	2018
	Deerwalk Institute of Technology, Tribhuvan University, Nepal	
	Winner: International Girls in ICT Day Hackathon	2016
	Nepal Telecommunications Authority and Women Leaders in Technology	
Research Experience	Outstanding Cambridge Learners Award- Top in Country	2013
	Cambridge Assessment International Education, United Kingdom	
Research Experience	Graduate Research Assistant	2022-Present
	Computational Biomedicine Lab (CBL) Rochester Institute of Technology, NY, USA Research Area: Fairness and distributional robustness of deep learning models. Currently researching on making generative models robust towards (spurious) feature correlations in data.	

	Independent Research Study as Alumna 05/2018-08/2018 Deerwalk Institute of Technology, Tribhuvan University, Nepal Research Focus: Empirically assess mixed-model approach of path finding (irregularities-tolerant dead-end filling with A* search) to understand its feasibility and effectiveness on convoluted maze paths.
	Research Assistant 03/2017-05/2017 Deerwalk Institute of Technology, Tribhuvan University, Nepal Research Focus: Understand the perspective of students on the usage of blended learning pedagogy in Deerwalk Institute of Technology.
Publications	DATS: Difficulty-Aware Task Sampler for Meta-Learning Physics-Informed Neural Networks M. Toloubidokhti, Y. Ye, R. Missel, X. Jiang, N. Kumar, R. Shrestha , L. Wang <i>The Twelfth International Conference on Learning Representations, 2024</i> Conference Article
	Distributionally Robust Optimization and Invariant Representation Learning for Addressing Subgroup Underrepresentation: Mechanisms and Limitations N. Kumar, R. Shrestha , Z. Li, L. Wang <i>Fairness of AI in Medical Imaging (FAIMI @ MICCAI), 2023</i> Workshop Article
	Maze Solving with Anomaly Tolerant Dead End Filling and A*: Implementation and Analysis R. Shrestha <i>Deerwalk Journal of Computer Science and Information Technology, 2019</i> Journal Article
Manuscripts Under Review	Re-Examining the Impact of Observed Feature Correlations on Minority Image Generation R. Shrestha , N. Kumar, A. Gopi, B. Lekhak, L. Wang <i>IEEE Transactions on Pattern Analysis and Machine Intelligence, 2025</i>
Conference Presentations	Maze Solving with Anomaly Tolerant Dead End Filling and A*: Implementation and Analysis <i>Fifth International Conference on Information Technology for Development, 2018</i>
	Blended Learning in DWIT College: From Learners Perspective <i>Fourth International Conference on Information Technology for Development, 2017</i>
Teaching Experience	Workshop Instructor 01/2019-03/2019 Deerwalk Institute of Technology, Tribhuvan University, Nepal Course: Fundamental concepts of Data Management and Analysis with Elasticsearch.
	Guest Trainer 07/2018 Local Development Training Academy (LDTA), Nepal A three-day intensive and hands-on training program on Cloud Services, Content Management System, and Project Management Tools.

Guest Trainer	07/2016
Local Development Training Academy (LDTA), Nepal	
A three-hour interactive training session on Mobile Applications' Usage, Security and Earning.	

**Industry
Experience**

Software Consultant	04/2021-07/2022
Saugal Trading Company Pvt. Ltd., Nepal	

Senior Software Engineer, Development Manager	01/2021-03/2021
Software Engineer, Team Lead	04/2019-01/2021
Software Engineer	05/2018-03/2019
Software Engineering Intern	09/2015-04/2018
Deerwalk Services Pvt. Ltd. (Now, Cedar Gate Technologies)	
Product: Deerwalk Plan Analytics	
Department: Research and Development	
Focus: Worked on and led projects to optimize Elasticsearch queries and extract healthcare data from Elasticsearch cluster for creating descriptive, prescriptive, and trend-based, industry-standard healthcare reports and data visualizations.	