

# Ruby Shrestha

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<b>Contact Information</b>	LinkedIn: <a href="https://www.linkedin.com/in/ruby--shrestha">www.linkedin.com/in/ruby--shrestha</a> Rochester, NY 14623 USA <a href="mailto:rs9466@rit.edu">rs9466@rit.edu</a>	
<b>Research Interests</b>	Deep learning, Generative models, Counterfactual data augmentation, Fairness & distributional robustness of deep learning models	
<b>Education</b>	<b>PhD, Computing and Information Sciences</b> 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	<b>2022-Present</b> GPA (3.72/4.00)
	<b>B.Sc., Computer Science and Information Technology</b> Tribhuvan University, Nepal	<b>2013-2017</b> (84.14%)
<b>Honors &amp; Awards</b>	<b>Dr. Russell and Melissa Bessette Award for Doctoral Student Excellence</b> Rochester Institute of Technology, Rochester, NY, USA	<b>2023</b>
	<b>National Female Education Award</b> <i>Native Name: Nepal Chhatra Bidhya Padak</i> Ministry of Education, Science and Technology, Government of Nepal	<b>2019</b>
	<b>Academic Excellence Award</b> Deerwalk Institute of Technology, Tribhuvan University, Nepal	<b>2018</b>
	<b>Winner: International Girls in ICT Day Hackathon</b> Nepal Telecommunications Authority and Women Leaders in Technology	<b>2016</b>
	<b>Outstanding Cambridge Learners Award- Top in Country</b> Cambridge Assessment International Education, United Kingdom	<b>2013</b>
<b>Technical Skills</b>	Deep Learning Framework: PyTorch Programming: Python Data Management and Analytics: MySQL, Elasticsearch Visualization: Tableau, Looker Studio Platforms: Windows, Linux, Mac OS	
<b>Research Experience</b>	<b>Graduate Research Assistant</b> 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.	<b>2022-Present</b>

	<b>Independent Research Study as Alumna</b> 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.	<b>05/2018-08/2018</b>
	<b>Research Assistant</b> 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.	<b>03/2017-05/2017</b>
<b>Publications</b>	<b>DATS: Difficulty-Aware Task Sampler for Meta-Learning Physics-Informed Neural Networks</b> M. Toloubidokhti, Y. Ye, R. Missel, X. Jiang, N. Kumar, <b>R. Shrestha</b> , L. Wang <i>The Twelfth International Conference on Learning Representations, 2024</i> Conference Article	
	<b>Distributionally Robust Optimization and Invariant Representation Learning for Addressing Subgroup Underrepresentation: Mechanisms and Limitations</b> N. Kumar, <b>R. Shrestha</b> , Z. Li, L. Wang <i>Fairness of AI in Medical Imaging (FAIMI @ MICCAI), 2023</i> Workshop Article	
	<b>Maze Solving with Anomaly Tolerant Dead End Filling and A*: Implementation and Analysis</b> <b>R. Shrestha</b> <i>Deerwalk Journal of Computer Science and Information Technology, 2019</i> Journal Article	
<b>Manuscripts Under Review</b>	<b>Re-Examining the Impact of Observed Feature Correlations on Minority Image Generation</b> <b>R. Shrestha</b> , N. Kumar, A. Gopi, B. Lekhak, L. Wang <i>IEEE Transactions on Pattern Analysis and Machine Intelligence, 2025</i>	
<b>Conference Presentations</b>	<b>Maze Solving with Anomaly Tolerant Dead End Filling and A*: Implementation and Analysis</b> <i>Fifth International Conference on Information Technology for Development, 2018</i>	
	<b>Blended Learning in DWIT College: From Learners Perspective</b> <i>Fourth International Conference on Information Technology for Development, 2017</i>	
<b>Teaching Experience</b>	<b>Workshop Instructor</b> Deerwalk Institute of Technology, Tribhuvan University, Nepal Course: Fundamental concepts of Data Management and Analysis with Elasticsearch.	<b>01/2019-03/2019</b>
	<b>Guest Trainer</b> 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.	<b>07/2018</b>

**Guest Trainer** **07/2016**

Local Development Training Academy (LDTA), Nepal

A three-hour interactive training session on Mobile Applications' Usage, Security and Earning.

<b>Industry Experience</b>	<b>Software Consultant</b> Saugal Trading Company Pvt. Ltd., Nepal	<b>04/2021-07/2022</b>
	<b>Senior Software Engineer, Development Manager</b>	<b>01/2021-03/2021</b>
	<b>Software Engineer, Team Lead</b>	<b>04/2019-01/2021</b>
	<b>Software Engineer</b>	<b>05/2018-03/2019</b>
	<b>Software Engineering Intern</b>	<b>09/2015-04/2018</b>
	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.	