NISHANT YADAV

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EDUCATION

Northeastern University Jan 2019 –
PhD Student, Interdisciplinary Engineering GPA: 3.95/4.0
Advisor: Prof. Auroop R. Ganguly
Preliminary Focus: Applied Machine Learning for Environmental and Climate Science

Coursework	Instructor	Term	Grade
CIVE 5699 - Climate Sci., Eng., Adaptation and Policy	Auroop R. Ganguly	Spring 2019	A
CIVE 7100 - Time Series and Geospatial Analysis	Auroop R. Ganguly	Spring 2019	A
CS 8982 - Readings: Special Topics in Deep Learning	Rose Yu	Spring 2019	A-
PHYS 5116 - Complex Networks	Albert L. Barabasi	Fall 2019	A
MIT: 12.S592** - Machine Learning With System Dynamics and Optimization	Sai Ravela	Fall 2019	A
CIVE 5280 – Remote Sensing for the Environment	Edward R. Beighley	Spring 2020	A

**attended at MIT. Corresponding course registered as CIVE 5978 (Independent Study) at Northeastern University.

University of Michigan Ann Arbor Jan 2014
MS, Intelligent Infrastructure Systems (Interdisciplinary) GPA: 3.4/4.0

Indian Institute of Technology (IIT) Guwahati May 2012
B.Tech, Civil and Environmental Engineering GPA: 8.1/10 (Rank: 4/52)

SKILLS

Programming: Python, MATLAB, R
Machine Learning Frameworks: PyTorch, TensorFlow

AWARDS

(1) Best Student Paper Award, Fragile Earth Workshop, 25th SIGKDD Conference on Knowledge Discovery and Data Mining, San Diego, CA, 2020. (2 best papers out of 14 submissions - link)
(2) ETH Zurich Graduate Research Fellowship - Awarded 8000 CHF to undertake graduate research at ETH Zurich during summer 2013.

PUBLICATIONS

Peer-Reviewed Journals

(1) Yadav, Nishant, Samrat Chatterjee, and Auroop R. Ganguly. "Resilience of Urban transport network-of-networks under intense flood Hazards exacerbated by targeted Attacks." 10.1 (2020): 1-14, Scientific Reports, Nature Publishing Group. (link)

Peer-Reviewed Conferences / Workshops

(1) Nishant Yadav, Sai Ravela, Auroop Ganguly, "Machine Learning for Robust Identification of Complex Nonlinear Dynamical Systems: Applications to Earth Systems Modeling", Fragile Earth Workshop, 26th SIGKDD Conference on Knowledge Discovery and Data Mining, San Diego, CA, 2020.
(2) Nishant Yadav, Kate Duffy, Auroop Ganguly, "A Deep Learning Approach to

Short-term Quantitative Precipitation Forecasting," 10th International Conference on Climate Informatics, Oxford, UK, 2020.
(3) Lizzy Warner, Samrat Chatterjee, Nishant Yadav, Robert Brigantic, Auroop Ganguly, "Multi-Stakeholder Resilient Infrastructure Decision Support Under Dynamic Environmental and Adaptive Adversarial Settings" IEEE Symposium on Technologies for Homeland Security, 2019. (link)
(4) Spiridonakos, Minas, Nishant Yadav, Eleni Chatzi, "Identification and Damage Detection of a Shear Frame Model Based on a Blind Source Separation Method", EWSHM - 7th European Workshop on Structural Health Monitoring, Nantes, France, 2014.(link)

POSTER PRESENTATION

(1) Nishant Yadav, Samrat Chatterjee, Auroop Ganguly. "Machine Intelligence Approach to Precipitation Nowcasting for Transportation Network-of-Networks Resilience". Poster presented at: American Meteorological Society (AMS) 100th Annual Meeting, 12-16 January 2020, Boston, USA
(2) Mary Warner, Nishant Yadav, Kate Duffy, Udit Bhatia and Auroop Ganguly. "Resilience Engineering for Climate Extremes and an Interconnected Vulnerable Earth (RECEIVE)." Modeling the World's Systems Conference, 13-15 May 2019, Washington, D.C., USA

RESEARCH EXPERIENCE

Northeastern University January 2019 -
Sustainability and Data Sciences Lab - Prof. Auroop Ganguly
Research statement: estimation of climate and environmental stressors using data-driven (ML/DL) and statistical approaches to quantify the impact on stressed systems (e.g., urban infrastructure) modeled as interconnected network-of-networks.

Pacific Northwest National Laboratory (Richland, WA) June 2019 - Aug 2019
National Security Summer Internship Program
Project: A network-of-networks approach to infrastructure resilience under natural hazards (specifically, weather extremes) in conjunction with potential cyber-threats.

University of Michigan Ann Arbor Oct 2012 - April 2013
Graduate Research Assistant - Prof. Jerome Lynch
Project: Data-driven infrastructure health monitoring - ML-based identification of structural damage (e.g. cracks).

PROFESSIONAL EXPERIENCE

Project Engineer Feb 2014 - Nov 2014
Cornerstone Engineering Inc. (Louisville, KY, US)
Structural Engineer Jan 2015 - July 2016
Design Group Ltd. (Bangalore, India)
Structural Engineer Aug 2016 - Jan 2018
Consortium Design LLP (Delhi-NCR, India)

Summary of duties: End-to-end analysis and design of structural projects up to $10 million. Generate finite element models (FEM) for contingency analysis. Non-destructive testing of old structures (e.g. power plant). Technical report writing.

OTHER ACTIVITIES

Research Assistant Feb 2018 - Aug 2018
Himalayan Environmental Conservation Organization (Dehradun, India)
Summary: Studied the impact of climate change on lower Himalayan region and designed adaptation strategies. E.g., designed low-cost bridge trusses for flood-prone regions. Led a skill development program for the rural youth.

MENTORSHIP ROLES

COVID-19 Vulnerability Analysis for MA May 2020 –
Co-developed and mentored Northeastern University undergraduate student (Linnaea Cahill) and graduate students (Puja Das and Ashis Pal) for creating a COVID-19 vulnerability analysis dashboard for Massachusetts.