Soumyakant Padhee (Soum)

CONTACT INFORMATION

College of Business & Economics,
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EDUCATION

Ph.D., Industrial Engineering, Northeastern University, USA — Jul. 2023
Dissertation - Dynamics of Innovation in Eng. design teams: Complex Network Approach. [O1]

M.S., Business (Operations Management), UW Madison, USA — May. 2019
M.S., Production Systems Engg., RWTH Aachen, Germany — Mar. 2015
B.Tech, Manufacturing Sc.& Engg., VSSUT, India — May. 2010

RESEARCH INTEREST

My research focuses on advancing the science of **collective intelligence** by exploring how groups of individuals can work together more effectively, **optimizing information exchange**, and building resilient systems that leverage diverse perspectives, behaviors, and knowledge in dynamic environments.

My **current focuses** are:

- **Evolution of embedded networks** - Science of Science [W3, J2, C4, C6]
- **Organizational design and Innovation** - Exploration & Exploitation [W2, C1-C3], Innovation Search in Heterogeneous Teams [W1, J1, C5 C6]
- **Resilient Systems** - Inventory Systems [W5]

Other Interests & Past work: Applied Machine Learning [J3, J6], Heuristic Optimization Algorithms [J4, J5, J7].

SELECTED PUBLICATIONS

Working & Under Review Papers

W1. B. Heydari, S. Chattopadhyay, **S. Padhee**, S. Karim (2023). *Core or Periphery: Examining where to allocate exploring inventors and the impact on breakthrough innovation.* (R&R at Strategic Management Journal)

W2. **S. Padhee**, B. Heydari (2024). *The Echo Chambers of Complexity: How Task Complexity Influences Team Groupthink and Individual Exploration* (Manuscript Available on SSRN, Jul. 2024)

W3. **S. Padhee**, B. Heydari (2024). *Identifying Evolution of Innovation Networks in Technology Life cycle: Isolating Innovation Legacy from Quality* (Manuscript Available)

W4. B. Heydari, Y. Bart, D.T. O' Brain, **S. Padhee**. *Short-term Rentals Improve Locals´ Experience of Neighborhood Eateries Evidence from the impact of Airbnb on Restaurants Quality in Boston.* (preparing Manuscript for submission)

W5. MS. Shalique, **S. Padhee**, N. Murthy. *Nudging for Fewer Returns: Experimental Insights into Consumer Behavior in E-commerce.* (Lab-based experiments in progress)

Journal Articles

J1. **S. Padhee**, N. Lore, B. Heydari (2023). *Design teams and industry life cycles: The interplay of innovation and complexity*. Systems Engineering. 2023;1-14.

Selected Publications Cont.

J2. **S. Padhee**, B. Heydari (2023). *Evolution of Innovation in Industry Life cycles: A Complex Network Perspective*. Proceedings of the Design Society 3, Cambridge University Press, 1705-1714

J3. G.S. Beriha, B. Patnaik, S.S. Mahapatra, **S. Padhee** (2012). *Assessment of safety performance in Indian industries using fuzzy approach*, Expert System with applications, Vol 39, Issue 3, 2012.

J4. **S. Padhee**, S. Pani, S.S. Mahapatra (2012). *Parametric Study on laser drilling of Al/SiCp metal matrix composite*, Proceedings of Institution of Mechanical Engineers, Journal of Engineering manufacture March, Vol 226, Issue 1, 2012.

J5. **S. Padhee**, N. Nayak, S. Panda, P. Dhal, S.S. Mahapatra (2012). *Multi-objective Parametric Optimization of Powder Mixed Electro-discharge Machining using Response Surface Methodology and Non- Sorted Genetic Algorithm*, Sadhana - Journal of Indian Academy Of Science, Vol.37, Part 2.

J6. H.B. Sahu, **S. Padhee**, S. Pani, S.S. Mahapatra (2011). *Prediction of spontaneous heating susceptibility of Indian coals using fuzzy logic and artificial neural network model*, Expert System with Applications, Vol 38, Issue 3, 2011.

J7. S. Panda, **S. Padhee**, A. K. Sood, S.S. Mahapatra (2009). *Optimization of Fused Deposition Modeling (FDM) Process Parameters Using Bacterial Foraging Technique*, Intelligent Information Management, Vol 1, No. 2.

Peer Reviewed Conference Proceedings

C1. *ACM Collective Intelligence, Boston* (Jun. 2024)- "The Echo Chambers of Complexity: How Task Complexity Influences Team Groupthink and Individual Exploration".

C2. *The Council of Engineering Systems Universities (CESUN) at Ninth International Engineering Systems Symposium*, Evanston. (Nov. 2023) - "The Echo Chamber of Complexity: An Experimental Study on the Influence of Design Complexity on Groupthink and Innovation".

C3. *16th Annual Behavioral Operations Conference, Young Achiever's Workshop, Baltimore (June 2023)* - "When the going gets tough, the tough get together: Experimental study of affinity for team collaboration under task complexity."

C4. *International Conference on Engineering Design - 24th in Bordeaux, France (July 2023)* - "Evolution of Innovation in Industry Life cycles".

C5. *Strategic Management Society (SMS) 42nd Annual Conference in London (September 2022)*- "Core or Periphery: Where Should Firms Locate Exploring Innovators? Exploring With an NK Model" with B. Heydari, S. Chattopadhyay, **S. Padhee**, S. Karim.

C6. *The Council of Engineering Systems Universities (CESUN) at Eighth International Engineering Systems Symposium*, Charlottesville. (October 2021) - "Innovation Flow in Engineering System Design Teams: Core and Periphery and the Role of Complexity".

Other works

O1. **S. Padhee** (2023). Ph.D Dissertation - *Dynamics of Innovation in Engineering Design Teams: Complex Network Approach*, Committee: Babak Heydari (Advisor), Samina Karim, Yingzi Lin, Tucker Marion. Northeastern University, Boston

O2. **S. Padhee** (2015). Master Thesis - *Reliability of Self-Optimizing Control Systems for Production Systems*. Committee: Eike Permin, Robert Schmitt. RWTH Aachen, Germany

Teaching Experience

Lenoir Rhyne University, College of Business & Economics.
Assistant Professor (Quantitative Management)

Courses :	Production Operations Management, Advance Data Analytics, Business Statistics	2023-2024
	Business Networks & Systems Thinking Digital Marketing	2024-2025

Northeastern University.

Instructor (Summer), Engineering Project Management	2023
Teaching Assistant (Fall-Spring), Economic Decision Making	2021–2023
Teaching Assistant (Spring), Platforms and Sharing Economics	2019–2020
Teaching Assistant (Fall), Economic Decision Making	2019–2020

Wisconsin School of Business.

Teaching Assistant (Fall-Spring), Business Analytics II 2016–2019
1600 students(total), 5 sections
Distinguished Teaching Award, 2017, 2018 & 2019

Service

Guest Editor: MDPI Electronics Journal: Special Issue on Advances in Learning on graphs and information networks (2024).

Journal & Conferences Reviewer:
Journal of Evolutionary Intelligence, Nature
EurOMA Conference, (2023, 2024), European Operations Management Association
Journal of Multiscale and Multidisciplinary Modeling, Experiments and Design, Springer Nature
Journal of Cluster Computing, Springer Nature
Journal of Computational Intelligence

Program Coordinator:
Undergraduate Majors: Business Analytics, Project Management, Supply Chain Management

Mentorship:

- Karthik R.R.N Gajendran, Northeastern University (2023),
  Master Thesis - Change Management in Project Management (MBTA Quality, Compliance and Oversight Office)
- Hendrik Eltges, Karlsruhe Institute of Technology, Germany (2024),
  Bachelor Thesis - An Empirical Investigation of the Behavioral Impact of a Social Marketing Campaign
- Abhilash Mishra, Indian Institute of Management, India (2023-2024)
  Ph.D Candidate.

Employment

Assistant Professor (Quantitative Management), College of Business & Economics, Lenoir Rhyne University	2023-
Graduate Research Assistant, Multi-AGent Intelligent Complex Systems Lab, Northeastern University	2019-2023
Graduate Teaching Assistant, Wisconsin School of Business, UW Madison	2016-2019
Research Assistant, (Hardware-in-Loop ECU Testing for Daimler Truck AG) FEV GmbH, Aachen, Germany	2015
Research Assistant Fraunhofer-Gesellschaft, Aachen, Germany.	2014–2015
	2012–2013
Assistant Manager (Vendor Development & Process Quality) New Engines & Power Trains CVBU, Tatanagar, TATA MOTORS, India.	
Assistant Manager (Head Manufacturing's Office) Production Planning Projects & Assembly Line Optimization Commercial Vehicle Business Unit, Tatanagar, TATA MOTORS, India	2010–2012

Honors and Awards

- College of Engineering Graduate Teaching Award, Northeastern University	2022
- Dept. of Mechanical & Industrial Engg. Engineering-as-Art Award	2021
- Henry C. Naiman Outstanding Graduate Student Teaching Award, Wisconsin School of Business	2018
- School of Business Scholarship, University of Wisconsin-Madison	2016–2019
- Best of Class Scholarship & named in Dean's list for outstanding academic achievement, RWTH Aachen University	2015

Certifications

Six Sigma Black Belt Certification, American Society of Quality, USA

Languages

English (Fluent), **Hindi** (Native), **Odia** (Native), **German** (Working Proficiency)

Technical Skills

R, Python, LaTeX, MATLAB, Otree, Gurobi