Harsh Anand

CONTACT INFORMATION

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EDUCATION

University of Virginia, Virginia, USA

- Doctor of Philosophy in Systems Engineering   2021 – Present
- Advisor: Prof. Negin Alemazkoor

The Pennsylvania State University, Pennsylvania, USA

- Master of Science in Data Analytics, GPA: **4/4**   2019 – 2021
- Thesis: *Energy Infrastructure Resilience and Economic Impacts: Modeling, Data Analytics, and Metrics*
- Committee: Mohamad Darayi (chair), Raghvinder S. Sangwan, Satish M. Srinivasan, Ashkan Negahban and Colin J. Neill

Manipal University, Karnataka, India

- Bachelor of Technology in Information Technology   2011 – 2015

PEER-REVIEWED PUBLICATIONS

1. Anand, Harsh and Darayi, Mohamad, "A Probabilistic Approach to Modeling Power Network Component Importance Considering Economic Impacts," accepted at *The Institute of Industrial and Systems Engineers (IISE) Annual Conference & Expo 2021*

2. Anand, Harsh and Darayi, Mohamad, "Power Network Component Vulnerability Analysis: A Machine Learning Approach," accepted at 2021 *Complex Adaptive Systems Conference*

3. Jaiswal, Devendra, Anand, Harsh, Srinivasan, Satish and Darayi, Mohamad, "A Data-Driven Model to Generate Disruptive Scenarios for Infrastructure Resilience Studies," accepted at 2021 *Complex Adaptive Systems Conference*

4. Saxena, Akshay, Anand, Harsh, Pradhan, Tribikram and Mishra, S. R. (2015). "A Hybrid Chaining Model with AVL and Binary Search Tree to Enhance Search Speed in Hashing." *International Journal of Hybrid Information Technology*, 8(3), 185–194

5. Pradhan, Tribikram, Anand, Harsh and Goyal, Akul (2014). "THA - A Hybrid Approach for Rule Induction System using Rough Set Theory, Genetic Algorithm and Boolean Algebra." *Global Journal of Researches in Engineering: Numerical Methods*, 14(1), 11

UNDER REVIEW

1. Anand, Harsh and Darayi, Mohamad, "Modeling and Analyzing Energy Infrastructure Resilience considering Economic Impact," submitted to *Energy Policy*

2. Sharma, Rahul*, Anand, Harsh*, Badr, Youakim and Qiu, Robin, "Time-to-Event Prediction using Survival Analysis for Alzheimer's Disease Progression," submitted to *Alzheimer's & Dementia: Translational Research & Clinical Interventions* (*Equal contribution)

TECHNICAL PRESENTATIONS

1. Anand, Harsh and Darayi, Mohamad, "A Probabilistic Approach to Modeling Power Network Component Importance Considering Economic Impacts," Technical Presentation in the session *Data and System Analytics Application II*, IISE 2021 Annual Meeting, May 2021

2. Anand, Harsh and Darayi, Mohamad, "Modeling and Analyzing Energy Infrastructure Resilience considering Economic Impact," Technical Presentation in the session *Equilibrium Modeling of the Environmental and Institutional Aspects of Interregional Electricity Trade*, INFORMS 2020 Annual Meeting, November 2020

POSTER PRESENTATIONS	1. Anand, Harsh and Darayi, Mohamad (2021). "Modeling and Analyzing Energy Infrastructure Resilience considering Economic Impact," IISE QCRE/DAIS Best Student Poster Session
	2. Anand, Harsh, Sharma, Rahul and Mungee, Atharva (2020). "Projecting Patterns with Causal Influences in a Dynamic Ecosystem for Retail Sales Forecasting," Penn State Poster Competition, Malvern, PA
	3. Mani, Alakesh, Anand, Harsh and Venkat, Akula (2020). "A Qualitative Study of Multi-Channel Marketing Campaigns using Market Mix Modeling," Penn State Poster Competition, Malvern, PA
	4. Anand, Harsh (2020). "Modeling and Analyzing Energy Infrastructure Resilience considering Economic Impact," Penn State Poster Competition, Malvern, PA

RESEARCH EXPERIENCE	Research Assistant - **University of Virginia**, VA, USA	May'2021 – Present
	Research Assistant - **The Pennsylvania State University**, PA, USA	Nov'2019 – May'2021
	Research Assistant – **Dept. of Information Technology, MIT, Manipal**, India	2013 – 2015
	Research Intern – **Indian Institute of Technology (IIT), Guwahati**, India	Summer 2013

PROFESSIONAL EXPERIENCE	Data Science Intern - **Swiss Re**, New York, NY, USA	Jun'2020 – Aug'2020
	Senior Data Scientist - **Kearney**, Mumbai, India	Jan'2017 – May'2021
	Machine Learning Engineer - **A.I. Research Lab, TCS**, Kochi, India	Aug'2015 – Nov'2016
	Data Science Intern, Semantic Search - **DataWeave Inc.**, Bangalore, India	Jan'2015 – Jun'2015

RESEARCH INTEREST	• **Methodological domains**: machine learning, deep-learning, system modeling and simulation, data-driven decision making, mathematical modeling and optimization
	• **Application domains**: energy systems, interdependent infrastructure systems, healthcare, computational sustainability, freight transportation, logistics and supply chains management

TECHNICAL SKILLS	• *Programming Languages*: Python, R, SQL, Java
	• *Data Science*: Data Mining, Predictive and Prescriptive Modeling, Quantitative Analysis, Parametric & Non-Parametric Statistical Modeling, Deep Learning, Time-series forecasting, Design of Experiments, A/B Testing, ANOVA, Bootstrapping, Data Structures and Algorithms
	• *Development*: Spark (PySpark, Spark SQL), Hadoop, MapReduce, Graph DB, HBase, Neo4j, CI/CD Jenkins
	• *Project Management*: Project Planning, Agile Development, Leadership, Problem Solving
	• *Visualization/Others*: Power BI, Tableau, Elastic Search, Excel (Advanced), AIIMS, Minitab, KNIME, Alteryx, AWS, IBM Bluemix, Palantir Foundry

AWARDS AND FELLOWSHIPS	Outstanding Student Award in Data Analytics, Penn State University	2021
	Penn State Valedictorian, Class of 2021	2021
	The Web Conference 2021 Student Scholarship	2021
	Warren V. Musser Fellowship in Entrepreneurial Studies	2020 – 2021
	Penn State Chancellor's Scholarship (*Merit Award*)	2019 – 2020
	AICTE Scholarship (*Tuition Waiver*), Manipal University	2011 – 2015

COMPETITIONS	Finalist - Mentor and Participant - 2021 Nittany AI Challenge	Ongoing
	Third Place – Innovation Design Competition @ 2021 IISE	2021
	Best Student Pitch - Lion Cage: Annual competition for early-stage entrepreneurs	2021, 2020
	Winner – Freestyle O.R. Supreme Case Competition @ 2020 INFORMS	2020
	Judge and moderator - Smart India Hackathon - Sentiment Analysis of Code-Mixed Languages 2020	

Placed in top 10% for prototyping Video-To-Text Summarizer - 2020 Nittany AI Challenge 2020

Runner's Up - Penn State Poster Competition - Retail Sales Forecasting 2020

Winner of Wawa - HCL Hackathon: Sales forecasting for Wawa using LSTM and Prophet 2019

Ranked top 1% in 4th International Math Olympiad and 13th National Science Olympiad

LEADERSHIP	Student Senator, School of Graduate Professional Studies, Penn State University	2019 – 2021
	Global Programs Senate Committee, Penn State University	2020 – 2021
	Student Council and Curriculum Change Committee, Manipal University	2012 – 2015
	Class Representative, Manipal University	2012 – 2015
	Educator for Non-profit, Chala Janjatiya Vikas Sanstha	2009 – 2019

SERVICES Webmaster - **OR/MS Tomorrow, INFORMS**   2021 – Present

Session Chair

2021 Complex Adaptive Systems Conference   Upcoming
   Session 4: System Analysis
   Session 7: Applications of AI
   Session 11: Data Science and Analytics

Reviewer
International Journal of Medical Informatics

AFFILIATIONS Institute for Operations Research and the Management Sciences (INFORMS), Institute of Industrial and Systems Engineers (IISE), The Honor Society of Phi Kappa Phi, Complex Adaptive Systems Conference

REFERENCES Dr. **Mohamad Darayi**
   Assistant Professor, Systems Engineering
   The Pennsylvania State University
   E-mail: mud415@psu.edu

Dr. **Youakim Badr**
   Associate Professor, Data Analytics
   The Pennsylvania State University
   E-mail:yzb61@psu.edu

Dr. **Satish M. Srinivasan**
   Assistant Professor, Information Science
   The Pennsylvania State University
   E-mail: sus64@psu.edu

Dr. **Tribikram Pradhan**
   Assistant Professor, Information & Communication Technology
   Manipal University
   E-mail: tribikram.pradhan@manipal.edu