Nisheeth Srivastava

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Indian Institute of Technology, Kanpur
Kalyanpur UP 208016   nsrivast@cse.iitk.ac.in

Education

PhD, Computer Science, University of Minnesota, October 2012
Dissertation title: *A computational investigation of being in the world*
Advisor: Paul R Schrater

B.Tech, Electrical Engineering (minor in Physics), Indian Institute of Technology, Madras, 2007

Employment

Associate Professor   Depts of Computer Science and Cognitive
                                                Science, IIT Kanpur
Kanpur, India   Jul 2021 -
Computational cognitive science, psychology & economics; applications to machine learning, ML for
digital governance

Assistant Professor   Dept of Computer Science, IIT Kanpur
Kanpur, India   Jan 2017 - Jun 2021
Computational cognitive science, psychology & economics; applications to machine learning, AI and
human factors research in CS.

Post-doc   Dept of Psychology, UCSD
La Jolla, CA   Feb 2014 - Nov 2016
Supervisor: Edward Vul. Building and testing computational models; multiple object tracking,
cognitive foundations of economic behavior, influence of autonomic arousal on memory

Post-doc   HBCSE, TIFR
Mumbai, India   Dec 2013 - Jan 2014
Supervisor: Sanjay Chandrasekharan. Designing experiments and analyzing data for eye tracking
experiments.

Research Assistant   Blue Cross Blue Shield
California   Jan 2012 - June 2012
Health insurance fraud detection, modelling patient trajectories through hospital systems

Research Assistant   Allina Clinics
Minneapolis   August 2011 - December 2011
Data analytics for health informatics; systems modeling for clinical efficiency measures.

Research Assistant   Jaideep Srivastava
University of Minnesota, Minneapolis   August 2009 - August 2012
Project leader: Anomaly detection for complex systems, contextual anomaly detection, distributed
anomaly detection, fault detection in UAVs

Summer Intern   Peter Grunwald
Centrum Wiskunde en Informatica, Amsterdam   June 2008 - August 2008
Information theoretic derivations of physical laws, rate distortion testing

Research Assistant   Arindam Banerjee

University of Minnesota, Minneapolis   August 2007 - January 2009
Levy processes, optimal lossy compression, PAC mixture modeling

Analyst   Vineet Singh
Intuit, CA   December 2007 - April 2008
Data mining and statistical analysis of weblog data.

Research Assistant   Sethu Vijayakumar
University of Edinburgh, Edinburgh   April 2007 - July 2007
Using Gaussian Process Latent Variable models (GPLVMs) for non-linear dimensionality reduction
of torque feedback data for learning optimal trajectory for three-link robot arm.

Research Assistant   Srinivasa Chakravarthy
Indian Institute of Technology, Madras   February 2007 - April 2007
Constructing a neural network model for hand-writing generation and visuo-motor coordination

Research Assistant   Bernhard Schölkopf
Max Planck Institute, Tubingen   Aug 2006–January 2007
Using kernel SVMs for automatic chorale harmonization

Research Assistant   Sitabhra Sinha
Institute of Mathematical Sciences, Chennai   May 2006–Aug 2006
Information-theoretic analysis of modularity and salary structure in organized economic units

Grants

1. Digital Public Goods for AI in Health, *National Health Authority* (Rs 118 lakhs total)

2. Reviewing status of telemedicine hubs in Uttar Pradesh, *Deloitte Pvt Ltd* (Rs 4 lakhs total)

3. Samar Abhilekh: Controlled Digital Lending for MoD History Division records, *Ministry of Defense* (Rs 120 lakhs total)

4. Modelling analysis of technical staffing requirements, *National Technical Research Organization*, (Rs 13 lakhs total), with Manindra Agrawal

5. Establishing the UP Digital Health Stack at IIT Kanpur, UP Government, (Rs 3416 lakhs total)

6. Image quality analysis and digital forensics, 2023, *Ernst & Young Pvt Ltd* (Rs 20 lakhs total)

7. Optimizing work assignments for network engineers, 2023, *ACT Corp* (Rs 27 lakhs total), with Nitin Saxena

8. Automated detection of fraudulent insurance claims for National Health Authority, *Ernst & Young LLP* (Rs 40 lakhs total)

9. Digitizing and automating PLI information management systems, 2022, *Ministry of Steel* (Rs 82 lakhs total), with Shalabh

10. Anomaly Detection in Exam Logs, 2021-2022, *Ernst & Young Pvt Ltd* (Rs 3 lakhs total)

11. Automated annotation of drone orthomosaics, 2021-2024, *Aereo Pvt Ltd* (Rs 42 lakhs total)

12. Upgrading DARPG information systems with AI capabilities, 2022-2024, *Department of Administrative Reforms and Public Grievances* (Rs 463 lakhs total), with Shalabh

13. Enabling intelligent and interactive grievance analysis at the Ministry of Defence, 2021-2024, *Ministry of Defence* (Rs 120 lakhs total), with Piyush Rai and Shalabh

14. Subsumption architecture based robots for infantry assistive roles, 2021-2022, *DRDO* CARS grant (Rs 10 lakhs total)

15. Designing a natural language understanding system for handling public grievances, 2020-2021 *Ministry of Defence* (Rs 15 lakhs total), with Piyush Rai and Shalabh

16. Characterizing the evolution of naming conventions in India, 2020-2022, *SERB MATRICS* grant (Rs 6.6 lakhs total)

17. Assessing the feasibility of large-sample multi-scale assessment of situated cognitive capabilities, 2020-2022, *DST CSRI Major Project* (Rs 454 lakhs total), with Narayanan Srinivasan and Sumitava Mukherjee

18. Testing the explanatory limits of limited value representations, 2017-2020, *DST CSRI Award* (Rs 40.4 lakhs total), with Narayanan Srinivasan

19. A predominantly auditory recommender system, *Tower Capital Research CSR*, (Rs 4 lakh total), with Piyush Rai

20. How metrizable are similarity judgments? 2015-2016, *Google Research Award*, ($51,256 total), with Ed Vul

21. Cognitive foundations for economic microfoundations, 2013-2015, *Institute for New Economic Thinking* ($98,892 total), with Paul Schrater

Awards and distinctions

Best Student Paper at BRIMS (2023)

National Awards for e-Governance Silver Medal (2023)

Class of 1973 Young Faculty Research Fellowship (2021-2024)

Cognitive Science Society's Marr Prize (2020)

Adjunct Faculty, CBCS, University of Allahabad, 2019-2021

Cognitive Science Society's Computational Modeling Prize (2015)

Research fellowships: Research I Fellowship (2016-2019), Centrum Wiskunde en Informatica, Amsterdam (2008); Dept of Informatics, University of Edinburgh (2007); MPI für Biological Cybernetics, Tubingen (2006)

Travel awards: BIS 2024, BIS 2023, BIS 2019, NIPS 2014, ICML 2008

Software

1. Samar Abhilekh (status: deployed for Ministry of Defence at CDIS@IITK)

2. Automated admit card quality analysis (status: deployed at Ernst & Young Pvt. Ltd.)

3. Digital forensics for insurance fraud detection (status: deployed at National Health Authority)

4. Semantic search and spam filtering capabilities for managing public grievances (status: deployed across all Indian government departments)

5. Adaptive patrol routing system for emergency response vehicles (status: field testing by UP Police)

6. Automated grain quality assessment system (status: deployed at IndoSaw Pvt Ltd)

Patents

1. Mahapatra, A., Srivastava, N., & Srivastava, J. (2019). U.S. Patent No. 10,176,260. Washington, DC: U.S. Patent and Trademark Office.

Publications

Journals

1. Shivnekar, Revati Vijay, and **Nisheeth Srivastava**. Measuring vacillations in reasoning. *Judgment and Decision Making* 19 (2024)

2. Pratyush Arya and **Nisheeth Srivastava**. Characterizing the Roles of Preference Homophily and Network Structure on Outcomes of Consensus Games. *Computational and Mathematical Organization Theory* (to appear)

3. Shubhamkar Ayare and **Nisheeth Srivastava**. Multiple object tracking with preattentive indexes. *Open Mind*, 2024

4. **Nisheeth Srivastava**, Anjali Sifar and Narayanan Srinivasan. Statistical prediction alone cannot identify good models of behavior. *Behavioral and Brain Sciences*, 2023

5. **Nisheeth Srivastava** and Arvind Verma. Artificial intelligence applications for the Indian Police, *Indian Police Journal*, 2022

6. Anjali Sifar and **Nisheeth Srivastava**. Over-precise predictions cannot identify good choice models, *Computational Brain and Behavior*, 2022

7. Anveshna Srivastava, **Nisheeth Srivastava** and Sanjay Chandrasekaran. Building strategies affect concept map quality, *Biochemistry and Molecular Biology Education*, 2021

8. Jeenath Rahaman, Harshit Agarwal, **Nisheeth Srivastava** and Sanjay Chandrasekharan. Mutable concepts and enactable analogies: how manipulatives help in learning area. *Cognitive Science*, 2018

9. **Nisheeth Srivastava** and Narayanan Srinivasan. Intertemporal impulsivity can also arise from persistent failures of long-term plans: comment on Nettle & Pepper (2017) *Behavioral and Brain Sciences*, 2017

10. **Nisheeth Srivastava** and Edward Vul. Attention modulates spatial precision in multiple object tracking. *Topics in Cognitive Science*, January 2016

11. **Nisheeth Srivastava** and Paul R Schrater. Learning what to want: context-sensitive preference learning. *PLoS One*, 2015

12. Paul Freeman, Rohit Pandita, **Nisheeth Srivastava** and Gary Balas. Model-based and Data-driven Fault Detection Performance for a Small UAV. *IEEE Transactions on Mechatronics*, May 2013

13. **Nisheeth Srivastava** and C Wade Savage. A structuralist view of metacognition in animals, *Cognitive Critique*, 2012

14. Amogh Mahapatra, **Nisheeth Srivastava** and Jaideep Srivastava. Contextual anomaly detection for text data. *Algorithms* 2012, 5(4), 469-489.

15. Saguna Dubey, Sandeep Sambaraju , Sarat C. Cautha, A. Parthasarathy, **N. Srivastava**, V. S. Chakravarthy, On the role of ambiguity in copying oriented line diagrams, *International Journal of Brain, Mind and Cognition*, 2011

16. **Nisheeth Srivastava** and Pramod K Srivastava, Modeling the repertoire of true tumor-specific MHC I epitopes in a human tumor, *PLoS One* (2009)

Conference/Workshop Proceedings

1. Abhishek Jaiswal and **Nisheeth Srivastava**. Learning to Play Video Games with Intuitive Physics Priors. Proceedings of CogSci 2024

2. Satwick Sen Sharma, Gouravmoy Boruah and **Nisheeth Srivastava**. How robust are fMRI and EEG data to alternative specifications in representational similarity analyses?. Proceedings of CogSci 2024

3. Abhishek Jaiswal and **Nisheeth Srivastava**. Benchmarking Reliability of Deep Learning Models for Pathological Gait Classification. Proceedings of ML4HC 2024

4. Arjun Mitra and **Nisheeth Srivastava**. Changes in time preference may simply be induced by changes in time perception. Proceedings of ICCM 2024

5. Pratyush Arya and **Nisheeth Srivastava**. Understanding Clique Formation in Social Networks - An Agent-Based Model of Social Preferences in Fixed and Dynamic Networks. Proceedings of SBP-BRIMS 2023 [**Best student paper**]

6. Abhishek Jaiswal, Gautam Chauhan and **Nisheeth Srivastava**. Using Learnable Physics for Real-Time Exercise Form Recommendations. Proceedings of RecSys 2023.

7. Pritam Laskar and **Nisheeth Srivastava**. Groups are better than individuals at solving optimum stopping problems. Proceedings of CogSci 2023

8. Samarth Mehrotra and **Nisheeth Srivastava**. Measuring the time utility of mental effort. Proceedings of CogSci 2023

9. Arjun Mitra, Narayanan Srinivasan and **Nisheeth Srivastava**. Unpredictability shortens planning horizons . Proceedings of CogSci 2023

10. Revati Shivnekar and **Nisheeth Srivastava**. Measuring moral vacillations. Proceedings of CogSci 2023

11. Shubhamkar Ayare and **Nisheeth Srivastava**. Tracking multiple objects without indexes. Proceedings of CogSci 2023

12. Anjali Sifar, Hariharan Purohit and **Nisheeth Srivastava**. Measuring the completeness of race models for perceptual decision-making. Proceedings of CogSci 2023

13. Abhishek Jaiswal, Gautam Chauhan and **Nisheeth Srivastava**. Using learnable physics for real-time exercise form recommendations. Proceedings of AI4athome@AAAI 2023

14. Tushar Shandilya and **Nisheeth Srivastava**. Adaptive real-time diversification of digital content. Proceedings of OARS-KDD 2022

15. Ankoju Bhanu Prakash and **Nisheeth Srivastava**. Sampling-based probability construction explains individual differences in risk preference. Proceedings of CogSci 2022

16. Samarth Mehrotra and **Nisheeth Srivastava**. Selecting between visuomotor lotteries to measure mental effort in risky decisions. Proceedings of CogSci 2022

17. Shashwat Vaibhav and **Nisheeth Srivastava**. Makadi: A Large-Scale Human-Labeled Dataset for Hindi Semantic Parsing. Proceedings of WILDRE@LREC 2022

18. Sharad Shukla and **Nisheeth Srivastava**. Federated matched averaging with information-gain based parameter sampling. Proceedings of AIMLSystems 2021

19. Apoorva Jain and **Nisheeth Srivastava**. Privacy-preserving record linkage using block-chains. Proceedings of ICSPN 2021

20. Anjali Sifar and **Nisheeth Srivastava**. Imprecise oracles impose limits to predictability in supervised learning. Proceedings of IJCAI 2021

21. Shobhit Jagga and **Nisheeth Srivastava**. Modeling procrastination as rational metareasoning about task effort. Proceedings of CogSci 2021

22. Ishan Singhal, Narayanan Srinivasan and **Nisheeth Srivastava**. One and known: Incidental probability judgments from very few samples. Proceedings of CogSci 2021

23. Avijit Roy and **Nisheeth Srivastava**. Decentralized reinforcement learning for multi-agent patrol routing. Proceedings of AASG@AAMAS 2021

24. Jatin Aswal and **Nisheeth Srivastava**. A recommender system for informal bibliotherapy. Proceedings of HealthRecSys20 at RecSys 2020

25. Tushar Shandilya and **Nisheeth Srivastava**. Using conceptual incongruity as a basis for making recommendations. Proceedings of RecSys 2020

26. Harish Balakrishnan, Shobhit Jagga and **Nisheeth Srivastava**. Inducing Preference Reversals by Manipulating Revealed Preferences, Proceedings of CogSci 2020.

27. Anjali Sifar and **Nisheeth Srivastava**. Limits on Predictability of Risky Choice Behavior, Proceedings of CogSci 2020. [**Marr Prize**]

28. Umair Z Ahmed, **Nisheeth Srivastava**, Renuka Sindhgatta and Amey Karkare. Characterizing the Pedagogical Benefits of Adaptive Feedback for Compilation Errors by Novice Programmers. Proceedings of ICSE-SEET 2020.

29. Meet Sheth and **Nisheeth Srivastava**. Predicting body size from mirror selfies. Proceedings of IHCI 2019.

30. Umair Z Ahmed, Renuka Sindhgatta, **Nisheeth Srivastava** and Amey Karkare. Targeted Example Generation for Compilation Errors. Proceedings of ACM Conference on Automated Software Engineering (ASE), 2019.

31. Aditya Narayan Chandrasekaran, Narayanan Srinivasan and **Nisheeth Srivastava**. Memory of relative magnitude judgments informs absolute identification. Proceedings of ICCM 2019.

32. **Nisheeth Srivastava**. Evidence for effort prediction in perceptual decisions. Proceedings of CogSci 2019.

33. **Nisheeth Srivastava**. Decision-makers minimize regret when calculating regret is easy. Proceedings of CogSci 2019.

34. Homanga Bharadwaj and **Nisheeth Srivastava**. New tab page recommendations strongly concentrate web browsing to familiar sources. Proceedings of ACM WebSci 2019.

35. **Nisheeth Srivastava**. Measuring conceptual incongruity from text-based annotations. Proceedings of IHCI 2018.

36. Vasundhara Rakesh and **Nisheeth Srivastava**. Modelling metareasoning about decision thresholds in a perceptual learning task. Proceedings of ICCM 2018

37. **Nisheeth Srivastava** and Ed Vul. A simple model of recognition and recall memory. Proceedings of NIPS 2017.

38. **Nisheeth Srivastava** and Edward Vul. A rational analysis of marketing strategies. Proceedings of CogSci 2017

39. **Nisheeth Srivastava**, Johannes Müller-Trede, Paul Schrater and Edward Vul. Modeling sampling duration in decisions from experience. Proceedings of CogSci 2016

40. **Nisheeth Srivastava** and Edward Vul. Choosing fast and slow: explaining differences between hedonic and utilitarian choices. Proceedings of CogSci 2015

41. **Nisheeth Srivastava** and Edward Vul. Attention dynamics in multiple object tracking. Proceedings of CogSci 2015

42. Sanjay Chandrasekharan, Geetanjali Date, Prajakt Pande Jeenath Rahaman, Rafikh Shaikh, Anveshna Srivastava, **Nisheeth Srivastava** and Harshit Agarwal. Seeing Eye to I: males recognize self, females inhibit recognition. Proceedings of Cog Sci 2015

43. **Nisheeth Srivastava**, Edward Vul and Paul R Schrater. Magnitude-sensitive preference formation. Proceedings of NIPS, 2014

44. **Nisheeth Srivastava** and Paul R Schrater. Classical conditioning via inference over observable situation contexts. Proceedings of CogSci 2014

45. **Nisheeth Srivastava** and Paul R Schrater. Frugal preference formation. Proceedings of CogSci 2014

46. Komal Kapoor, **Nisheeth Srivastava**, Jaideep Srivastava and Paul R Schrater. Measuring spontaneous devaluations in user preferences. Proceedings of KDD 2013

47. **Nisheeth Srivastava** and Paul R Schrater. Active inference with embodied cognitive limitations. Workshop on Information in Perception and Action, NIPS 2012

48. **Nisheeth Srivastava** and Paul R Schrater. Rational inference of relative preferences. Neural Information Processing Systems (NIPS) 25, 2012

49. Amogh Mahapatra, **Nisheeth Srivastava** and Jaideep Srivastava. Characterizing the Internet's sense of humor. In Proceedings of IEEE SocialCom/PASSAT, 2012

50. Amogh Mahapatra, **Nisheeth Srivastava** and Jaideep Srivastava (2012). Contextual Anomaly Detection In Text Data.Text Mining Workshop, Proceedings of the Twelth SIAM International Conference on Data Mining, Anaheim,CA, April 26-April 28

51. Prasanna Desikan, **Nisheeth Srivastava** et al. Early prediction of potentially preventable events in ambulatory care sensitive admissions from clinical data. Proceedings of the 2nd IEEE Health Informatics and Systems Biology Conference, 2012

52. Komal Kapoor, Christopher Amato, **Nisheeth Srivastava** and Paul Schrater. Using POMDPs to Control an Accuracy-Processing Time Tradeoff in Video Surveillance. Proceedings of the Twenty-Fourth IAAI Conference on Artificial Intelligence (IAAI-12), Toronto, Canada, July 2012

53. **Nisheeth Srivastava** and Paul R Schrater. Cognitive efficiency as a causal mechanism for social preferences. In Proceedings of IEEE SocialCom/PASSAT, 2011

54. **Nisheeth Srivastava**, Komal Kapoor and Paul R Schrater. A cognitive basis for theories of intrinsic motivation. In Proceedings of IEEE International Conference on Development and Learning and Epigenetic Robotics, 2011

55. **Nisheeth Srivastava** and Paul R Schrater. A value-relativistic decision theory predicts known biases in human preferences. In Proceedings of the 33rd Annual meeting of the Cognitive Science Society (CogSci 2011)

56. **Nisheeth Srivastava** and Paul R Schrater. A predictive model for self-motivated decision-making behavior. Proceedings of BRIMS (2011)

57. **Nisheeth Srivastava** and Jaideep Srivastava. A hybrid-logic algorithm for fault detection in complex cyber-physical systems. Proceedings of PHM, (2010)

58. Aleksandar Lazarevic, **Nisheeth Srivastava** et al. Theoretically optimal distributed anomaly detection. Proceedings of IEEE International Workshop on Mining Multiple Information Sources, International Conference on Data Mining (2009)

Book Chapters

1. Sitabhra Sinha and **Nisheeth Srivastava** (2007), Is inequality inevitable in organized society? In Econophysics of Markets and Business Networks, Arnab Chatterjee & Bikas Chakrabarti (Eds.), Springer Milan Press

Working/archived manuscripts

Archit Sakhadeo and **Nisheeth Srivastava**, Effective extractive summarization using frequency-filtered entity relationship graphs, (2018) arXiv:1810.10419

Nisheeth Srivastava and Paul Schrater Learning what to want: data-driven microfoundations SSRN: http://ssrn.com/abstract=2526540.

Nisheeth Srivastava and Paul Schrater, An Evolutionarily Motivated Model of Decision-Making Under Uncertainty (2010) SSRN: http://ssrn.com/abstract=1687205

Nisheeth Srivastava, Evolvability need not imply learnability, (2009) arXiv:0904.0648

Nisheeth Srivastava, The relativity of theory, (2009) arXiv:0902.3479

Arindam Banerjee and **Nisheeth Srivastava**, Conditionally Positive Definite Kernels and Infinitely Divisible Distributions, TR08-034, Dept of CSE, University of Minnesota, 2008

Posters/Demos/Extended abstracts

1. Satwick Sen Sharma, Gouravmoy Boruah and **Nisheeth Srivastava**. Specification curve analysis of representational similarity findings using fMRI and EEG processing pipelines, CoSyNe 2024

2. Tapas Rath, **Nisheeth Srivastava** and Narayanan Srinivasan. Visual Attention in Spontaneous Vision, ACCS 2023

3. Pritam Laskar and **Nisheeth Srivastava**. Differences Between Individuals and Groups in Temporal Stopping Behaviour, ACCS 2023

4. Revati Shivnekar and **Nisheeth Srivastava**. Measuring Moral Conflict, ACCS 2023

5. Ankoju Bhanu Prakash and **Nisheeth Srivastava**. A probability-by-sampling model explains individual differences in risk preference, ACCS 2023

6. Anish Thankachan, Ishan Singhal, Narayanan Srinivasan and **Nisheeth Srivastava**. Incidental probability learning and its limitations, ACCS 2023

7. Hariharan Purohit and **Nisheeth Srivastava**. Measuring behavioral variability in random dot motion task, ACCS 2023

8. Shubhamkar Ayare and **Nisheeth Srivastava**. Tracking multiple objects without indexes, ACCS 2023

9. Samarth Mehrotra and **Nisheeth Srivastava**. Measuring Mental Effort's Relationship With Time, ACCS 2023

10. Pritam Laskar and **Nisheeth Srivastava**. Procrastination and Progress-Effort Characteristic of a Task, ACCS 2022

11. Samarth Mehrotra and **Nisheeth Srivastava**. Dynamic allocation of cognitive resources under risk, ACCS 2022

12. Avijit Roy and **Nisheeth Srivastava**. A decentralized reinforcement learning for patrol routing. ICAPS 2021

13. Harish Balakrishnan and **Nisheeth Srivastava**, Testing a preference inference account of classic preference reversals, ACCS 2019

14. Anjali Jain and **Nisheeth Srivastava**, Limits On Predictability Of Risky Choice Behavior, ACCS 2019

15. Prabhath Nampally and **Nisheeth Srivastava**, No evidence for rational adaptation of encoding variability in absolute identification, ACCS 2019

16. Arjun Mitra, Narayanan Srinivasan and **Nisheeth Srivastava**, Planning failures induced by budgetary overruns cause intertemporal impulsivity. CogSci 2019

17. Rujuta Pimprikar and **Nisheeth Srivastava**. Probing mental representations that determine context-sensitive monetary reasoning. ACCS 2018

18. Vasundhara Rakesh and **Nisheeth Srivastava**. Modelling metareasoned decision threshold shifts in a random dot motion discrimination task. ACCS 2018

19. **Nisheeth Srivastava**. Similarity judgments for popular items are (almost) metrizable. ACCS 2017

20. **Nisheeth Srivastava**. Measuring part set cueing in web browser new tab displays. ACCS 2017

21. **Nisheeth Srivastava**. Memory of relative magnitudes judgments informs absolute identification. CogSci 2017

22. **Nisheeth Srivastava** and Edward Vul. Rationalizing subjective probability distortions. CogSci 2017

23. Rafikh Shaikh and **Nisheeth Srivastava**. Arithmetic training does not improve ANS acuity in primary school students. UNISA ISTE 2016

24. Anveshna Srivastava, **Nisheeth Srivastava** and Sanjay Chandrashekharan. Order of element placement in physical concept-mapping reveals differences in subject matter comprehension. Spatial Cognition 2016

25. **Nisheeth Srivastava**. The spiral of anxiety: a cognitive account. CogSci 2015

26. **Nisheeth Srivastava** and Edward Vul. Perceptual and cognitive limitations interact in multiple object tracking. VSS 2015

27. Anveshna Srivastava, **Nisheeth Srivastava** and Sanjay Chandrashekharan. Procedural analysis elucidates stages in students' understanding of biology concepts, Annual Meeting of the American Educational Research Association, Apr 2014.

28. **Nisheeth Srivastava** and Paul R Schrater. Classical conditioning via inference over observable situation contexts. CoSYNe 2014.

29. Paul R Schrater and **Nisheeth Srivastava**. How does the brain compute value? A rational model for preference formation. CoSYNe 2013.

30. Komal Kapoor, **Nisheeth Srivastava** and Paul R Schrater. Reconciling decisions from description with decisions from experience. CoSYNe 2013.

31. **Nisheeth Srivastava** and Paul R Schrater. Cognitive efficiency explains intelligence effects on risk sensitivity and temporal discounting. CoSYNe 2012.

32. N Marcus Thygeson, **Nisheeth Srivastava** and Jaideep Srivastava. Medical Office Visit Frequency Fits a Power Law Distribution Modified by Exponential Censoring. 21st Annual International Conference for the Society for Chaos Theory in Psychology and Life Sciences, August 4-6, 2011

33. Cognitively efficient need satisfaction: a novel intrinsic reward model explains multiple cognitive biases. Talk at 44th Annual Meeting of the Society for Mathematical Psychology, Medford, MA, Jul 2011

34. **Nisheeth Srivastava** and Paul R Schrater. A cognitive principle of least effort explains many cognitive biases. Comparative Decision Making conference, University of Kentucky, 13-15 May 2011

35. **Nisheeth Srivastava** and Paul R Schrater. Your choice models are wrong: a cognitively motivated decision theory predicts known cognitive biases. CoSYNe 2011.

36. **Nisheeth Srivastava** and Jaideep Srivastava. Adaptive dimensionality reduction for visualizing faults in complex systems. CIDU 2010

37. **Nisheeth Srivastava**, A Lazarevic, J Srivastava. Anomaly detection in complex networks. 3rd NASA Conference on Intelligent Data Understanding, 2009

38. Aleks Lazarevic, **Nisheeth Srivastava**, Jaideep Srivastava. Solving a prisoners' dilemma in distributed anomaly detection. 3rd NASA Conference on Intelligent Data Understanding, 2009

Invited talks/tutorials/panels

1. *Strengthening local governance with artificial intelligence*, National Conference on e-governance, September 2024

2. *21st century information processing*, NeGW, August 2024

3. *Introduction to ML for Health*, AFMC Pune, January 2024

4. *Human-machine teaming for defense applications*, CME Pune, December 2023

5. *Can we use LLMs to generate standardized exam questions?*, Meeting of Public Service Commissions, Gangtok, Sep 2023

6. *AI in administration*, National Conference on e-governance, Indore, August 2023

7. *Generative AI: challenges and opportunities*, Annual Meeting of NTT Data Global, Bangalore, July 2023

8. *Intelligentizing public service delivery*, Regional Conference on Administrative Reforms, Bhopal, Mar 2023

9. *AI-enabled management of public grievances*, Regional Conference on Administrative Reforms, Mumbai, Jan 2023

10. *Deciding when to decide.* BCL Workshop, IISc Bangalore, Jan 2023

11. *A simple model of recognition and recall memory*, Department of Psychology, UCLA, June 2021

12. *The need for AI standards*, ICADABAI, IIM Ahmedabad, April 2019

13. *Where the ML hits the human*, CODS-COMAD, Jan 2019

14. *Human-centered artificial intelligence*, IIT BHU, Jul 2018

15. *Recognition and recall are simple consequences of content addressability in human memory*, CBCS Allahabad, Apr 2017

16. *Subjective probability distortions: mechanism and applications* , Dept of Computer Science, IIT Kanpur, Nov 2015

17. *Subjective probability distortions are caused by selective memory recall*, CBCS Allahabad, Oct 2015

18. *Where do preferences come from?*, INET-CIGI Conference, Hong Kong, April, 2013

19. *How does the brain create expectations? It's complicated.* Society of Complex Systems for Cognitive Science, 19th Jul, 2011

20. *Anomaly detection for medical devices*, Medtronic Inc., July 2010

21. *Information-theoretic observations on the calculus of variations*, 2nd International Workshop on Entropy, EPFL, Sept 8-10, 2008

22. *A road to optimal lossy compression*, Centrum Wiskunde en Informatica, Amsterdam, July 2008

Service

Member, Program Monitoring and Advisory Committee, DST SERB Digital Gaming Initiative, 2023-

Founder and Foreman, Center for Developing Intelligent Systems, IIT Kanpur, 2022-

Member, Network-centric Warfare Review Committee, HQ-IDS, 2022

Coordinator, CoE on AI for Healthcare, SMRT IIT Kanpur, 2022-

Member, PGARC, IIT Kanpur 2021-2023

Coordinator, COGJET 2020 entrance exam

Coordinator, Workshop on *AI for defence applications* at Ordnance Factories, Kanpur, April 2019

Project Editor, ISO/IEC 42106 standard for differentiated benchmarking of AI systems, International Standards Organization

Program Committee: ACCS 2019, ACCS 2018, IJCAI 2018, CIKM 2016, SBP 2016, BRIMS 2014-15; ICAS 2014-16; IEEE SocialCom 2012

Referee for *Cognition, Cognitive Processing, Cognitive Computation, PLoS One, JEP:HPP, IEEE Trans. Mechatronics, IEEE Computational Intelligence, IJITDM, Royal Society Open Sciences, Psychological Studies*

Reviewer for CogSci 2014-19, ICML 2008, 2019, NeurIPS 2019