

VITA
Varun Dutt

GENERAL INFORMATION

Associate Professor
School of Computing and Electrical Engineering
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Indian Institute of Technology Mandi
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https://www.researchgate.net/profile/Varun_Dutt;
<https://scholar.google.com/citations?user=jly9u8AAAAAJ&hl=en>;

RESEARCH INTERESTS

- Artificial Intelligence and Cognitive Modeling (modeling human behavior in dynamic tasks through computer algorithms)
- Human-Computer Interaction (study of the interaction between people and computers)
- Situation Awareness (recognition, comprehension, and projection of a situation in the decision environment)
- Judgment and Decision Making (understanding human behavior in problems involving risk and uncertainty)
- Environmental Decision Making (understanding human behavior in environmental problems)

ACADEMIC TRAINING

Graduate:	Ph.D., Engineering and Public Policy, Carnegie Mellon, USA	2011
	M.S., Engineering and Public Policy, Carnegie Mellon, USA	2010
	M.S., Software Engineering, Carnegie Mellon, USA	2006
Undergraduate:	B.E., Computer Science and Engineering, Thapar University, India	2004

SKILLS

I am currently working as an Associate Professor in the School of Computing and Electrical Engineering and School of Humanities and Social Sciences at Indian Institute of Technology Mandi. I am applying my knowledge and skills in the fields of computer science, psychology, and public policy to explore how humans make decisions on social, managerial, and environmental issues. My Ph.D. thesis focused on answering the question *why do we want to defer actions on climate change*, and I have investigated the question by applying literature on people's risk-preferences, time-preferences, social-cultural dilemmas, and linear thinking. I have used lab-based methods involving human participants and cognitive models to investigate my research questions.

In addition to my thesis research, I have investigated how people explore and exploit alternatives and make decisions from experience in risk and uncertainty at both individual and group levels. For this investigation, I have created human factors and cognitive models of human behavior using principles of instance-based learning, reinforcement learning, and Bayesian learning theories. The typical approach I have followed has focused on model creation, prediction, validation by running lab-based experiments, and further model generalization or model cross-validation in novel task situations.

ACADEMIC RESEARCH EXPERIENCE

INSTITUTION	POSITION	DATES
School of Computing and Electrical Engineering and School of Humanities and Social Sciences, Indian Institute of Technology, Mandi, India	Associate Professor	April 2019 – Present
School of Computing and Electrical Engineering and School of Humanities and Social Sciences, Indian Institute of Technology, Mandi, India	Assistant Professor	June 2012 – Mar 2019
Dynamic Decision Making Lab, Carnegie Mellon, Pittsburgh, PA, USA	Post-doctoral Fellow	Aug 2011 – May 2012
Dynamic Decision Making Lab, Carnegie Mellon, Pittsburgh, PA, USA	Graduate Research Assistant	Aug 2007 – Aug 2011

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Dynamic Decision Making Lab, Carnegie Mellon,
Pittsburgh, PA, USA

Research Programmer

May 2006 – Jul 2007

TEACHING EXPERIENCE

COURSE	DATES
<i>Assistant/Associate Professor, Indian Institute of Technology Mandi, India</i>	
CS307: Systems Practicum	Feb 2023
CS662: Mobile Virtual Reality and Artificial Intelligence	Feb 2022
IK599I: Independent Study in Indian Knowledge System	Aug 2022
IC 252: Data Science 2	Feb 2019, Feb 2020
IC 272: Data Science 3	Aug 2019, Aug 2020
CS 202: Data Structures and Algorithms	Aug 2020
HS523: Decision-making for Social Change	Feb 2019, Feb 2020, Feb 2021
IC 201P: Prototype Development	Feb 2019, Feb 2013, Feb 2014, Feb 2020
HS 528: Information Technology and Development	Aug 2018, Aug 2019, Aug 2020, Aug 2021
CS 207: Applied Database Practicum	Aug 2018, Aug 2019, Aug 2021, Aug 2022
5-Week Induction Program	Aug, 2017, Aug 2018, Aug 2019
IC 250: Programming and Data Structure Practicum	Feb 2018
CS 606: Computational Modeling of Social Systems	Feb 2019, Feb 2018, Feb 2017
RM 600 Research Methodology	Aug 2020
HS 616: Managerial Thinking and Decision Making	Aug 2014, Aug 2015, Feb 2018
CS 660: Data Mining for Decision Making	Aug 2015, Feb 2017, Aug 2018
EM 604: Energy: Environment Policy and Law	Feb 2015, Aug 2015, Feb 2016 Aug 2017
CS 303: Software Engineering	Aug 2012, Aug 2013, Aug 2014
IC 150P: Computation for Engineers Lab	Feb 2013, Aug 2014
DP 301P: Interactive Socio-Technical Practicum	Feb 2014, Feb 2016, Feb 2017, Feb 2018, Feb 2019, Feb 2020
CS 506: Cognitive Modeling	Feb 2013, Feb 2014, Feb 2016
CS 308: Large-Scale Applications Practicum	Feb 2014, Feb 2015, Feb 2016, Feb 2021, Aug 2021, Aug 2022
CS 208: Mathematical Foundations of Computer Science	Aug 2016
HS 301: Public Policy and Advocacy Skills Engineering	Aug 2013
IC 100: Reverse Engineering	Aug 2013
CS 603: Managerial Decision Making	Aug 2012
<i>Graduate Teaching Assistant, Carnegie Mellon University, Pittsburgh, PA</i>	
88-431: Dynamic Decision Making	May 2007 - Jul 2007
19-752: EPP Project Management	Jan 2010 - May 2010
05-775: Cognitive Perspective in HCI	Jan 2010 - Feb 2010

ACADEMIC ADMINISTRATIVE EXPERIENCE

INSTITUTION	POSITION	DATES
Indian Institute of Technology Mandi, India	Chair, Indian Knowledge System and Mental Health Applications Centre	Dec 2022 – Present
Indian Institute of Technology Mandi, India	Associate Dean, Resource Generation and Alumni Relations	Apr 2021 – Present
Indian Institute of Technology Mandi, India	Project Director, IIT Mandi iHub and HCI Foundation	Jan 2021 – Present
Indian Institute of Technology Mandi, India	Advisor, WING (Website)	Feb 2020 – Nov 2021
Indian Institute of Technology Mandi, India	Lead Coordinator, TIH (HCI foundation)	May 2020 – Jan 2021

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Indian Institute of Technology Mandi, India	Advisor, Alumni Affairs Cell	Feb 2020 – Nov 2021
Indian Institute of Technology Mandi, India	Advisor, Training and Placement Cell	Nov 2018 – Feb 2020
Indian Institute of Technology Mandi, India	Associate Dean, International Relations	Aug 2015 – Apr 2020
Indian Institute of Technology Mandi, India	SCEE Member, Senate	Nov 2012 – Apr 2020
Indian Institute of Technology Mandi, India	Chief Warden	Feb 2015 – Nov 2017
Indian Institute of Technology Mandi, India	Faculty Advisor, B. Tech. Students	Aug 2012 – Aug 2016
Indian Institute of Technology Mandi, India	Member, SHSS Purchases	Jan 2013 – Aug 2016
Indian Institute of Technology Mandi, India	Co-Advisor, International Relations	Aug 2012 – Aug 2015
Indian Institute of Technology Mandi, India	Advisor, Recruitment Cell	Jan 2013 – Aug 2015
Indian Institute of Technology Mandi, India	Member, SCEE Purchases	Jan 2013 – Feb 2014
Indian Institute of Technology Mandi, India	Warden, Nako Hostel	May 2014 – Feb 2015
Indian Institute of Technology Mandi, India	Asst. Warden, Nako Hostel	Aug 2012 – Feb 2014
Indian Institute of Technology Mandi, India	Member of Editorial Team, SCRI	Aug 2012 – Dec 2012
Indian Institute of Technology Mandi, India	Advisor, Programming Club	Aug 2012 – Dec 2012
Indian Institute of Technology Mandi, India	Coordinator, Design Practicum	Jan 2013 – Jun 2013
Indian Institute of Technology Mandi, India	Member, Course Proposal Committee	Jan 2013 – Sep 2013

PROFESSIONAL EXPERIENCE

INSTITUTION	POSITION	DATES
Intiot Services Pvt. Ltd., India	Founder and Executive Director	Apr 2019 - Present
RxDataScience Inc., NY, USA	Board of Governor	Jan 2018 - Present
Intergovernmental Panel on Climate Change (IPCC)	Lead Author (Chapter 2)	Nov 2012 – Mar 2014
Newspaper Financial Chronicle, Inc., India	Knowledge Editor	Dec 2008 – Aug 2018
Newspaper Economic Times, Inc., India	Freelance Journalist	Aug 2006 – Aug 2007
Messenger Service Inc., Pittsburgh, PA, USA	Software Engineer	Aug 2006 - Sep 2006
Tata Consultancy Services (TCS), India	Software Engineer	Feb 2005 - Jun 2005
MotherSumi Infotech and Designs Ltd.	Software Engineer	Aug 2004 - Jan 2005

PROJECTS

1. Why do people exhibit a lack of Understanding about Earth's Climate? Influence of Repeated Feedback, IITM/SG/VD/32, INR 5 lakhs, IIT Mandi, Sep 2014 – Sep 2017
2. Building a Secure and Trustworthy Cyberspace: A Behavioral Game-Theoretic Approach, IITM/DST/VD/64, INR 23 lakhs, DST, Dec 2014 – Dec 2017
3. Machine Learning and Data Mining for Sales and Analytics in Pharma, IITM/CONS/PPLP/VD/03, INR 60 lakhs, Purdue Pharma L.P. USA, Feb 2015 – Feb 2018
4. Visvesvaraya PhD Scheme for Electronics & IT in 2014-15, IITM/DeitY-MLA/ASO/93, INR 217 lakhs, DeitY-MLA, Aug 2015 – Present
5. Decisions from experience: AN ERP investigation of decision based on valuation of outcomes and probabilities, IITM/DST/DB/89, INR 18.6 lakhs, DST, Aug 2015 – Oct 2017 (Mentor: Dr. Varun Dutt)
6. Visualization of Big Data in Pharma, IITM/CONS/PPLP/VD/05, INR 6 lakhs, Purdue Pharma, L.P., USA, Aug 2015– June 2016
7. Development of human-performance modeling framework via physiological and signal processing tools for visual cognitive enhancement in IVD, VR and AR paradigms, IITM/DRDO-CARS/VD/110, INR 22 lakhs, DRDO, Jun 2016 – Jun 2019
8. Efficient query and visualization of Big Data, IITM/CONS/RxDSI/VD/07, INR 6.5 lakhs, Rx Data Science Inc., USA, Sep 2016 – Jun 2017
9. Development and evaluation of landslide risk communication solutions in Mandi District of H.P., IITM/HPSCSTE/VD/130, INR 5.14 lakhs, Himachal Pradesh State council for Science, Technology & Environment (SCSTE), Nov 2016 – Nov 2018
10. Design and Development of a Smart Seat-Belt Monitoring System, INR 10.5 lakhs, HE India, Feb 2017 – Feb 2019
11. Application for mining rare diseases and analyzing and predicting patient journeys, IITM/CONS/RxDSI/VD/16, US \$21,667, RxDataScience Inc., USA, Nov 2018 - Aug 2019

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12. Development and evaluation of low-cost landslide early warning solutions, IITM/DRDO-DTRL/VD/179, INR 10 lakhs, DRDO-DTRL, Oct 2017 – Oct 2020
13. Development and evaluation of low-cost landslide monitoring solutions, IITM/NDMA/VD/184, NDMA, INR 27.8 lakhs, Dec 2017 – Dec 2020
14. Design of Advanced Big Data Analytics in the CygNet Management System for large telecom networks, IITM/MHRD(UAY)/AD/115, MHRD, INR 140 lakhs, Jun 2016 – Jun 2020 (Co-PI)
15. A Game Theoretic Approach involving Experimentation and Computational Modeling using Deception in Cyber Security, Department of Science and Technology (ICPS), INR 60 lakhs, Feb 2019 – Feb 2022
16. Public Perception of Air Pollution and development and testing of a low-cost Air Pollution Sensing and Warning System, IITM/DEST-HP/VD/240, INR 7,00,000, Department of Environment, Science and Technology, Shimla, Himachal Pradesh, May 2019 – May 2021
17. Deployment of sensors for landslide monitoring and early warning, Deputy Commissioner Mandi (H.P.), IITM/DCoM/VD/204, INR 3,00,000, Jun 2018 – Jun 2021
18. Development and Deployment of low-cost landslide monitoring and warning system in district Sirmaur (H.P.), Deputy Commissioner Sirmaur (H.P.), IITM/DC-SIR/VD/226, INR 4,00,000, Jan 2019 – Jan 2020
19. Evaluation of quantitative systems pharmacology and machine learning models for blood glucose prediction, IITM/CONS/RxDSI/VD/33, RxDataScience Inc., USA, INR 15,26,400, Aug 2019 – Feb 2022
20. UKIERI – DST international workshop on adversarial cybersecurity, IITM/WS/VD/79, UKIERI – DST, INR 1,56,700, Sep 2020 – Oct 2020
21. Human Performance enhancement via tDCS in VR and performance forecasting via machine learning methods, IITM/DRDO-LSRB/VD/301, Life Sciences Research Board, DRDO, INR 49,13,480, Dec 2020 – Dec 2023
22. A low-cost MEMS-based and video-based monitoring and early warning system for rainfall-induced landslides, IITM/DST/VKU/300, INR 40 lakhs, DST, Dec 2020 – Dec 2023 (Co-PI)
23. Low-cost extensometer- based landslide monitoring and early warning device, IITM/DST/KVU/316, DST, INR 44,87,288, Feb 2021 – Feb 2024 (Co-PI)
24. Replicating human cognitive behavior on robots' models using ACT-R cognitive architecture for search-and-retrieve missions in virtual environments, IITM/DRDO/VD/324, CAIR DRDO, INR 36,08,440, Mar 2021 – Mar 2023
25. Evaluation of risk perception, fear, social distancing, masks and treatments regarding Covid-19 in India, IITM/ICSSR/VD/317, ICSSR, INR 3,25,000, Mar 2021 – Sept 2021
26. Deployment of low-cost landslide monitoring and warning systems, IITM/DDMA-M/VD/325, DDMA, INR 49,20,000, Feb 2021 – Feb 2024
27. Technology Innovation Hub (HCI), DST, NM-ICPS, INR 110,00,000, Dec 2020 – Dec 2025 (Project Director)
28. Development of a remote-sensing satellite-data enabled disaster (landslide) decision response system with local ground-based monitoring. IITM/DDMA-M/VD/358. INR 56 lakhs, March 2022 - March 2025.
29. Development and Deployment of Low-Cost Landslide Monitoring Solutions in Kangra District, Himachal Pradesh, IITM/DDMA-Kan/KVU/357, 50 lakhs, Feb 2022 - Feb 2027.
30. Development of an operational monitoring system of landslides in Kinnaur district through satellite and low-cost IoT based sensors data, IITM/DDMA-Kinn/VD/345, 23 lakhs, Dec 2021 - Dec 2024.
31. Smart Blood, Vaccine and Medicine Monitoring System, 7 lakhs, Feb 2023 - Feb 2025.
32. Team-HackIT: a web-based testbed for multiplayer cyber deception experiments, 34 Lakhs, Feb 2023 - Feb 2026

SCHOLARSHIPS AND FELLOWSHIPS

INSTITUTION	NAME	DATES
Carnegie Mellon University	Visiting Faculty, Social and Decision Sciences	Dec 2013 – Jan 2014
Max Planck Institute for Human Development	Summer Institute on Bounded Rationality	Jul 2009 – Aug 2009
Carnegie Mellon University	Steinbrenner Fellowship	Aug 2008 – Aug 2009
Carnegie Mellon University	Dean's Fellowship	Aug 2007 - May 2008
Carnegie Mellon University	ACT-R Summer School	Jul 2007 – Aug 2007
Thapar University	Tuition Fellowship (1 st in Branch)	Aug 2000 – Aug 2001

BOOK PUBLICATIONS

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Dutt, V., Chandra, S., & Cassenti, D. (2023). *Human decision-making in combat situations involving traditional and immersive visual technologies*. Frontiers Media SA. Lausanne, Switzerland.

Dutt, V., & Pammi, V. S. C. (2018). *Application of Cognitive Approaches to Cyber Security*. Frontiers Media SA. Lausanne, Switzerland.

Dutt, V. (2011). *Why do we want to defer actions on climate change? A psychological perspective* (Doctoral dissertation). Carnegie Mellon University. Pittsburgh, PA, USA.

JOURNAL PUBLICATIONS

Aashima, Bhargav, S., Kaushik, S., & **Dutt, V.** (in press). Development of Ensemble Tree Models for Generalized Blood Glucose Level Prediction. *Lecture Notes in Electrical Engineering*.

Choudhary G., Rao, A. K., **Dutt, V.** (2023). Does correlation heuristic dependence reduce due to classroom teaching? A case study from India. *Frontiers in Psychology (Cognitive Science)*, 14 - 2023, doi: 10.3389/fpsyg.2023.1040538

Dutt, V., & Chandra S. (2023). Editorial on the Research Topic Human Decision-Making in Combat Situations Involving Traditional and Immersive Visual Technologies. *Frontiers in Psychology (Cognitive Science)*, 14 - 2023, doi: 10.3389/fpsyg.2023.1166115

Rao, A. K., Chandra, S., & **Dutt, V.** (2022). Learning from feedback: Evaluation of dynamic decision-making in virtual reality under various repetitive training frameworks. *Frontiers in Psychology (Cognitive Science)*, 13: 872061. doi: 10.3389/fpsyg.2022.872061

Uttrani, S., Sharma, N., & **Dutt, V.** (2022). Life and Death Decisions and COVID-19: Investigating and Modeling the Effect of Framing, Experience, and Context on Preference Reversals in the Asian Disease Problem. *Topics in Cognitive Science*, 14(4), 800-824. doi: 10.1111/tops.12607

Gupta, A., Roy, P. P., & **Dutt, V.** (2021). Evaluation of instance-based learning and q-learning algorithms in dynamic environments. *IEEE Access*, 9, 138775-138790.

Aggarwal, P., Moisan, F., Gonzalez, C., & **Dutt, V.** (2022). Learning about the effects of alert uncertainty in attack and defend decisions via cognitive modeling. *Human Factors*, 64(2), 343-358.

Pathania, A., Kumar, P., Priyanka, Maurya, A., Kumar, M., Chaturvedi, P., ... & **Dutt, V.** (2022). Predictions of soil movements using persistence, auto-regression, and neural network models: a case-study in Mandi, India. *International Journal of Swarm Intelligence*, 7(1), 94-109.

Katakwar, H., Aggarwal, P., Maqbool, Z., & **Dutt, V.** (2022). Influence of probing action costs on adversarial decision-making in a deception game. In *Ict analysis and applications* (pp. 649-658). Springer Singapore.

Pathania A., Kumar P., Priyanka, Maurya A., Uday K. V., & **Dutt V.** (2021). Development of an Ensemble Gradient Boosting Algorithm for Generating Alerts About Impending Soil Movements. *Lecture Notes in Electrical Engineering*, 749. doi: 10.1007/978-981-16-0289-4_28

Thakur, V., Robinson, K., Oguz, E. A., Depina, I., Pathania, A., Kumar, P., Chaturvedi, P., Uday, K. V., & **Dutt, V.** (2021). Early Warning of Water-Triggered Landslides. *Lecture Notes in Civil Engineering*, 140. doi: 10.1007/978-981-33-6590-2_11

Mali, N., **Dutt, V.**, & Uday K. V. (2021). Determining the Geotechnical Slope Failure Factors via Ensemble and Individual Machine Learning Techniques: A Case Study in Mandi, India. *Frontiers in Earth Science*, 9, 701837. doi: 10.3389/feart.2021.701837

Kumar, P., Sihag, P., Chaturvedi, P., Uday, K., & **Dutt, V.** (2021). BS-LSTM: An Ensemble Recurrent Approach to

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Forecasting Soil Movements in the Real World. *Frontiers in Earth Science*, 9, 696792. doi: 10.3389/feart.2021.696792

Choudhary, G., & **Dutt V.** (2021). Experience in a Climate Simulator: Influence of Probability Function and Feedback on Decisions Against Climate Change. *Frontiers in Psychology*, 12, 674892. doi: 10.3389/fpsyg.2021.674892

Kumar, P., Sihag, P., Sharma, A., Pathania, A., Singh, R., Chaturvedi, P., Mali, N., Uday, K. V., **Dutt, V.** (2021). Prediction of Real-World Slope Movements via Recurrent and Non-recurrent Neural Network Algorithms: A Case Study of the Tangni Landslide. *Indian Geotech Journal*, 51, 788–810. doi: 10.1007/s40098-021-00529-4

Chaturvedi, P., & **Dutt, V.** (2021). Understanding Human Decision-Making in an Interactive Landslide Simulator Tool via Reinforcement Learning. *Frontiers in Psychology*, 11:499422. doi: 10.3389/fpsyg.2020.499422.

Pathania, A., Kumar, P., Priyanka., Maurya, A., Uday, K. V., & **Dutt, V.** (2020) Development of an Ensemble Gradient Boosting Algorithm for Generating Alerts about impending Soil Movements. In Workshop on Machine learning, Deep learning, and Computational Intelligence for wireless communication. *Lecture Notes in Electrical Engineering. Volume 749*

Rao, A. K., Chandra, S., & **Dutt, V.** (2020). Desktop and Virtual-Reality Training Under Varying Degrees of Task Difficulty in a Complex Search-and-Shoot Scenario. *Lecture Notes in Computer Science*, 12428, 421–439. https://doi.org/10.1007/978-3-030-59990-4_31

Agarwal, K., Uniyal, P., Virendrasingh, S., Krishna, S., & **Dutt, V.** (2020). Spam Mail Classification Using Ensemble and Non-Ensemble Machine Learning Algorithms. *Lecture Notes in Networks and Systems*, 141, 179-189.

Katakwar, H., Aggarwal, P., Maqbool, Z., & **Dutt, V.** (2020). Influence of Network Size on Adversarial Decisions in a Deception Game Involving Honeypots. *Frontiers in Psychology*, 11, 2385.

Tyagi, R., Aggarwal, P., Mohanty, M., **Dutt, V.**, & Anand, A. (2020). Computational cognitive modeling and validation of Dp140 induced alteration of working memory in Duchenne Muscular Dystrophy. *Nature Scientific Reports*, 10(1), 1-12.

Kumar, M., & **Dutt, V.** (2020). Understanding Decisions in Collective Risk Social Dilemma Games Using Reinforcement Learning. *IEEE Transactions on Cognitive and Developmental Systems*, 12(4), 824-840.

Kaushik, S., Choudhury, A., Natarajan, S., Pickett, L. A., & **Dutt, V.** (2020). Medicine expenditure prediction via a variance-based generative adversarial network. *IEEE Access*, 8, 110947-110958.

Aggarwal, P., & **Dutt, V.** (2020). The role of information about opponent's actions and intrusion-detection alerts on cyber decisions in cyber security games. *Cyber Security: A Peer-Reviewed Journal*, 3(4), 363-378.

Kaushik, S., Choudhury, A., Sheron, K.P., Sayee, N.D., Larry A. P., & **Dutt V.** (2020). AI in healthcare: time-series forecasting using statistical, neural, and ensemble architectures. *Frontiers in Big Data*, 3(4).

Maqbool, Z., Aggarwal, P., Pammi, V. C., & **Dutt, V.** (2020). Cyber Security: Effects of Penalizing Defenders in Cyber-Security Games via Experimentation and Computational Modeling. *Frontiers in Psychology*, 11 (11).

Sangar, S., **Dutt, V.**, & Thakur, R. (2020). Coping with out-of-pocket health expenditure in India: evidence from NSS 71st round. *Global Social Welfare*, 7(3), 275-284.

Maqbool, Z., & **Dutt, V.** (2019). Behavioural Cybersecurity: Investigating the influence of patching vulnerabilities on cyber decision-making via cognitive modeling. *Journal of Cyber Situation Awareness*, 4(1), 185-209.

Kumar, M., & **Dutt, V.** (2019). Alleviating misconceptions about Earth's climate: evidence of behavioral learning in

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stock-and-flow simulations. *System Dynamics Review*, 34(4), 503-526.

Sangar, S., **Dutt, V.**, & Thakur, R. (2019). Comparative Assessment of Economic Burden of Disease in Relation to Out of Pocket Expenditure. *Frontiers in Public Health*, 7.

Sangar, S., **Dutt, V.**, & Thakur, R. (2019). Distress financing of out-of-pocket health expenditure in India. *Review of Development Economics*, 23(1), 314-330.

Aggarwal, P., Moisan, F., Gonzalez, C., & **Dutt, V.** (2018). Understanding Cyber Situational Awareness in a Cyber Security Game Involving Recommendations. *International Journal of Cyber Situational Awareness*, 3(1), 1-29.

Choudhury, A., Kaushik, S., & **Dutt, V.** (2018). Social-network analysis in healthcare: analysing the effect of weighted influence in physician networks. *Network Modeling Analysis in Health Informatics and Bioinformatics*, 7(1), 17.

Chaturvedi, P., Arora, A., & **Dutt, V.** (2018). Learning in an interactive simulation tool against landslide risks: the role of strength and availability of experiential feedback. *Natural Hazards and Earth System Sciences*, 18(6), 1599-1616.

Sangar, S., **Dutt, V.**, & Thakur, R. (2018). Economic burden, impoverishment and coping mechanisms associated with out-of-pocket health expenditure: analysis of rural-urban differentials in India. *Journal of Public Health*, 1-10.

Sangar, S., **Dutt, V.**, & Thakur, R. (2018). Rural-urban differentials in out-of-pocket health expenditure and resultant impoverishment in India: evidence from NSSO 71st Round. *Asia-Pacific Journal of Regional Science*, 3, 273-291.

Sharma, N., Debnath, S., & **Dutt, V.** (2018). Influence of an intermediate option on the description- experience gap and information search. *Frontiers in Psychology*, 9, 364.

Kumar, M., & **Dutt, V.** (2018). Experience in a Climate Microworld: Influence of Surface and Structure Learning, Problem Difficulty, and Decision Aids in Reducing Stock-Flow Misconceptions. *Frontiers in Psychology*, 9, 299.

Chaturvedi, P., Arora, A., & **Dutt, V.** (2017). Learning in an Interactive Simulation Tool against Landslide Risks: The Role of Amount and Availability of Experiential Feedback, *Natural Hazards and Earth System Sciences Discussion*, DOI:10.5194/nhess-2017-297.

Sharma, G., Kaushal, Y., Chandra, S., Singh, V., Mittal, A. P., & **Dutt, V.** (2017). Influence of Landmarks on Wayfinding and Brain Connectivity in Immersive Virtual Reality Environment. *Frontiers in Psychology*, 8, 1220.

Sharma, N., & **Dutt, V.** (2017). Modeling decisions from experience: How models with a set of parameters for aggregate choices explain individual choices. *Journal of Dynamic Decision Making*, 3(3).

Maqbool, Z., Makhijani, N., Pammi, V. C., & **Dutt, V.** (2017). Effects of Motivation: Rewarding Hackers for Undetected Attacks Cause Analysts to Perform Poorly. *Human Factors*, 59(3), 420-431.

Kaushik, S., Choudhury, A., Mallik, K., Moid, A., & **Dutt, V.** (2016). Applying Data Mining to Healthcare: A Study of Social Network of Physicians and Patient Journeys. *Lecture Notes in Computer Science*, 9729, 599-613.

Gonzalez, C., & **Dutt, V.** (2016). Exploration and maximization during information search and experimental choice. *Journal of Dynamic Decision Making*, 2(2), 1-8.

Biswas, P., **Dutt, V.**, & Langdon, P. (2016). Comparing Ocular Parameters for Cognitive Load Measurement in Eye-gaze Controlled Interfaces for Automotive and Desktop Computing Environments. *International Journal of Human-Computer Interaction*, 32 (1), 23-38.

Dutt, V., & Gonzalez, C. (2015). Accounting for outcome and process measures in dynamic decision-making tasks through model calibration. *Journal of Dynamic Decision Making*, 1(1).

Gonzalez, C., Ben-Asher, N., Martin, J. M., & **Dutt, V.** (2015). A cognitive model of dynamic cooperation with varied interdependency information. *Cognitive Science*, 39(3), 457-495.

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- Dutt, V.**, Arlo-Costa, H., Helzner, J., & Gonzalez, C. (2014). The Description-Experience Gap in Risky and Ambiguous Gambles. *Journal of Behavioral Decision Making*, 27(4), 316-327.
- Mehlhorn, K., Ben-Asher, N., **Dutt, V.**, & Gonzalez, C. (2014). Observed Variability and Values Matter Towards a Better Understanding of Information Search and Decisions from Experience. *Journal of Behavioral Decision Making*, 27(4), 328– 339.
- Debnath, S., Baishya, S. S., Triebel, R., **Dutt, V.**, Cremers, D. (2014). Environment-Adaptive Learning: How Clustering Helps to Obtain Good Training Data. *Lecture Notes in Computer Science*, 8736, pp 68-79. doi: 10.1007/2F978-3-319-11206-0_8
- Kumar, A., Prakash, J., **Dutt, V.** (2014). Understanding Human Driving Behavior through Computational Cognitive Modeling. *Lecture Notes in Computer Science*, 8662, pp 56-65. doi: 10.1007/978-3-319-11167-4_6
- Dutt, V.**, & Kaur, A. (2013). Cyber Security: Testing the Effects of Attack Strategy, Similarity, and Experience on Cyber Attack Detection. *International Journal of Trust Management in Computing and Communications*, 1(3/4), 261-273. doi: 10.1504/IJTMCC.2013.056428
- Dutt, V.**, Young-Suk, A., & Gonzalez, C. (2013). Cyber Situation Awareness: Modeling the Detection of Cyber Attacks with Instance-based Learning Theory. *Human Factors*, 55(3), 605-618. doi: 10.1177/0018720812464045
- Proctor, R.W., Yamaguchi, M., **Dutt, V.**, & Gonzalez, C. (2013). Dissociation of S-R Compatibility and Simon Effects with Mixed Tasks and Mappings. *Journal of Experimental Psychology: Human Perception and Performance*, 39(2), 593-609. doi: 10.1037/a0029923
- Gonzalez, C., **Dutt, V.**, & Lebiere, C. (2013). Validating Instance-Based Learning Mechanisms Outside of ACT-R. *Journal of Computational Science*, 4(4), 262–268. doi: 10.1016/j.jocs.2011.12.001
- Dutt, V.**, & Gonzalez, C. (2013). Enabling eco-friendly choices by relying on the proportional-thinking heuristic. *Sustainability*, 5(1), 357-371. doi: 10.3390/su5010357
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Agarwal, K., Agrawal, S., Chaturvedi, P., Mali, N., Uday, V., & **Dutt, V.** (2017). Minute-scale prediction of soil movement using machine-learning techniques. *In Indian Landslide Congress, Indian Institute of Bombay, India*.

Agrawal, K., Baweja, Y., Dwivedi, D., Saha, R., Prasad, P., Agrawal, S., Kapoor, S., Chaturvedi, P., Mali, N., Kala, V.U., **Dutt, V.** (2017, December). A Comparison of Class Imbalance Techniques for Real-World Landslide Predictions. *In Machine Learning and Data Science (MLDS), 2017 International Conference on*, 1-8. IEEE.

Kaushal, K. K., Kaushik, S., Choudhury, A., Viswanathan, K., Chellappa, B., Natarajan, S., Pickett, L. & **Dutt, V.** (2017, December). Patient Journey Visualizer: A Tool for Visualizing Patient Journeys. *In Machine Learning and Data Science (MLDS), 2017 International Conference on*, 106-113. IEEE.

Choudhury, A., Kaushik, S., & **Dutt, V.** (2017, July). Social-Network Analysis for Pain Medications: Influential physicians may not be high-volume prescribers. *In Proceedings of the 2017 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining 2017*, 881-885. ACM.

Aggarwal, P., Gonzalez, C., & **Dutt, V.** (2017, June). Modeling the effects of amount and timing of deception in simulated network scenarios. *In Cyber Situational Awareness, Data Analytics And Assessment (Cyber SA), 2017 International Conference On*, 1-7. IEEE

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Varun Dutt

Choudhury, A., Kaushik, S., & **Dutt, V.** (2017). Data -mining Medications for Pain: Analyzing adoption behavior of physicians and switching behavior of patients. *The second International Conference on Internet of Things, Data and Cloud Computing (ICC 2017)*, At Cambridge, UK.

Dutt, V., Moisan F., & Gonzalez C. (2016). Role of Intrusion-Detection Systems in Cyber -Attack Detection. 7th *International Conference on Applied Human Factors and Ergonomics*, Orlando, Florida, USA.

Chaturvedi, P., Arora, A., & **Dutt, V.** (2016). Interactive Landslide Simulator: A tool for Landslide Risk Assessment and Communication. 7th *International Conference on Applied Human Factors and Ergonomics*, Orlando, Florida, USA.

Aggarwal, P., Gonzalez, C., & **Dutt, V.** (2016) . Cyber- security: Role of Deception in Cyber-Attack Detection. 7th *International Conference on Applied Human Factors and Ergonomics*, Orlando, Florida, USA.

Maqbool, Z., Pammi, V., & **Dutt, V.** (2016). Influence of motivational factors on hackers' and analysts' decisions in dynamic security games. 7th *International Conference on Applied Human Factors and Ergonomics*, Orlando, Florida, USA.

Aggarwal, P., Gonzalez, C., & **Dutt, V.** (2016). Looking from the Hacker's Perspective: Role of Deceptive Strategies in Cyber Security. *International Conference On Cyber Situational Awareness, Data Analytics And Assessment (CyberSA 2016)*, London UK.

Maqbool, Z., Pammi, V., & **Dutt, V.** (2016). Cybersecurity: Effect of Information Availability in Security Games. *International Conference On Cyber Situational Awareness, Data Analytics And Assessment (CyberSA 2016)*, London UK.

Aggarwal, P., Gonzalez, C., & **Dutt, V.** (2016). Looking from the Hacker's Perspective: Role of Deceptive Strategies in Cyber Security. CyberSA 2016, 10.1109/CyberSA.2016.7503288.

Chaturvedi, P., & **Dutt, V.** (2015). Evaluating the Public Perceptions of Landslide Risks in the Himalayan Mandi Town. HFES 2015 *International Annual Meeting*, Los Angeles.

Debnath, S., & **Dutt, V.** (2015). Experience – Description Gap in a Stock Market Investment Game. *2nd Annual Conference on Cognitive Science (ACCS-2015)*, IIT Kanpur (Kanpur)

Maqbool, Z., Bandyopadhyay, D., Pammi, V., & **Dutt V.** (2015). Role of motivational factors in dynamic security games: A behavioral game-theoretic approach. *2nd Annual Conference on Cognitive Science (ACCS- 2015)*, IIT Kanpur (Kanpur)

Kumar, M., & **Dutt, V.** (2015). Free Riders in a Public Goods Game for Climate Change. *2nd Annual Conference on Cognitive Science (ACCS-2015)*, IIT Kanpur (Kanpur)

Kumar, M., & **Dutt, V.** (2015). Understanding Cooperative Behavior against Climate Change through a Public- Goods Game. *History*, 1(2), 68-71.

Aggarwal, P., Maqbool, Z., Grover, A., Singh, S., Pammi, V. S. C., & **Dutt, V.** (2015, June). Cyber Security: A game-theoretic analysis of defender and attacker strategies in defacing-website games. In *International IEEE Conference on Cyber Situational Awareness, Data Analytics and Assessment (CyberSA 2015)*, London, UK (pp. 1-8).

Sharma, N., & **Dutt, V.** (2014). Decisions from Experience: Could Models of Aggregate Choice Explain Individual Choices from Information Search? In *Paper presented at the 23rd Annual Conference on Behavior Representation in Modeling & Simulation (BRiMS 2014)*. Washington, DC: USA.

Sharma, N., & **Dutt, V.** (2014). Modeling Choices at the Individual Level in Decisions from Information Search. In *Paper presented at the 1st Annual Conference on Cognitive Science (ACCS 2014)*. New Delhi, India.

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Varun Dutt

- Sharma, N., & **Dutt, V.** (2014). Decisions from Experience: How Models of Aggregate Choices Explain Individual Choices? In *Paper presented at the 4th IEEE International Advance Computing Conference*. Gurgaon, India.
- Sharma, N., & **Dutt, V.** (2014). Modeling Choices at the Individual Level in Decisions from Experience. In Poster presented at the Interdisciplinary Emerging and Converging Research & Academia collaborative workshop in Innovative Engineering, Technology & Science Fields (IECRAIETS), IIT Mandi, India.
- Kumar, M., & **Dutt, V.** (2014). Understanding Cooperation against Climate Change through a Public-Goods Game. In Poster presented at the Interdisciplinary Emerging and Converging Research & Academia collaborative workshop in Innovative Engineering, Technology & Science Fields (IECRAIETS), IIT Mandi, India.
- Chaturvedi, P. & **Dutt, V.** (2014). Assessment and Perception of Landslide Risks. In Poster presented at the Interdisciplinary Emerging and Converging Research & Academia collaborative workshop in Innovative Engineering, Technology & Science Fields (IECRAIETS), IIT Mandi, India.
- Chouhan, R., Ranganathan, K. & **Dutt, V.** (2014). An Investment Device: Applications of Decision from Description and Experience to Portfolio Allocations. In Poster presented at the Interdisciplinary Emerging and Converging Research & Academia collaborative workshop in Innovative Engineering, Technology & Science Fields (IECRAIETS), IIT Mandi, India.
- Arora, A., & **Dutt, V.** (2013). Cyber Security: Evaluating the Effects of Attack Strategy and Base Rate through Instance-Based Learning. In *Paper presented at the 12th International Conference on Cognitive Modeling*. Ottawa, Canada.
- Kaur, A., & **Dutt, V.** (2013). Cyber Situation Awareness: Modeling the Effects of Similarity and Scenarios on Cyber Attack Detection. In *Paper presented at the 12th International Conference on Cognitive Modeling*. Ottawa, Canada.
- Kanaparthi, B., Reddy, R., & **Dutt, V.** (2013). Cyber Situation Awareness: Rational Methods versus Instance-Based Learning Theory for Cyber Threat Detection. In *Paper presented at the 12th International Conference on Cognitive Modeling*. Ottawa, Canada.
- Gonzalez, C., Ben-Asher, N., Martin, J. M., & **Dutt, V.** (2013). Emergence of cooperation with increased information: Explaining the process with dynamic adaptation to surprises. In *Paper presented at the 15th International Conference on Social Dilemmas*. Zurich, Switzerland.
- Ben-Asher, N., **Dutt, V.**, & Gonzalez, C. (2013). Accounting for the integration of descriptive and experiential information in a repeated prisoner's dilemma using an instance-based learning model. In *Paper presented at the 22nd Behavior Representation in Modeling & Simulation (BRIMS) Conference*. San Antonio, Texas, USA.
- Kaur, A., **Dutt, V.**, & Gonzalez, C. (2013). Modelling the Security Analyst's Role: Effects of Similarity and Past Experience on Cyber Attack Detection. In *Paper presented at the 22nd Behavior Representation in Modeling & Simulation (BRIMS) Conference*. San Antonio, Texas, USA.
- Reddy, R., Kanaparthi, B. R., & **Dutt, V.** (2013). Testing the Effects of Recency and Inertia on Cyber Threat Detection Through Instance-Based Learning. In *Paper presented at the 3rd IEEE International Advance Computing Conference (IACC-2013)*. Ghaziabad, India.
- Dutt, V.** (2012). Information Search in Decisions from Experience: Influence of Variability and Timing on Patterns of Sampling. In *Paper presented at the 2012 Annual Convention of National Academy of Psychology (NAOP)*. Bangalore, India.
- Gonzalez, C., **Dutt, V.**, Martin, J., & Ben-Asher, N. (2012). Decisions from Experience in Conflict Situations: A cognitive model of the effects of interdependence information. In *Paper presented at the 2012 Behavioral Decision Research in Management (BDRM) conference*. Boulder, Colorado.
- Dutt, V.**, Young-Suk, A., Ben-Asher, N., & Gonzalez, C. (2012). Modeling the Effects of Base-rates on Cyber Threat

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Varun Dutt

Detection Performance. In *Paper presented at the 11th International Conference on Cognitive Modeling*. Berlin, Germany.

Mehlhorn, K., **Dutt, V.**, Ben-Asher, N., & Gonzalez, C. (2012). Accumulation of Evidence and Information Search in Experiential Decisions. In *Paper presented at the 11th International Conference on Cognitive Modeling*. Berlin, Germany.

Dutt, V., & Gonzalez, C. (2011). Enabling eco -friendly choices by using human psychological biases. In *Paper to be presented at the 2011 Society of Risk Analysis Annual Meeting*. Charleston, SC, USA.

Gonzalez, C. & **Dutt, V.** (2011). Instance-Based Learning: Integrating Sampling and Repeated Decisions from Experience. In *Paper to be presented at the 32st Annual Conference of the Society for Judgment and Decision Making*. Seattle, WA, USA.

Arlo-Costa, H., **Dutt, V.**, Gonzalez, C., & Helzner, J. (2011). Decisions from Experience in Conditions of Uncertainty. In *Paper presented at Seventh International Symposium on Imprecise Probability: Theory and Applications*. Innsbruck, Austria.

Dutt, V., Yu, M., & Gonzalez, C. (2011). Deciding when to escape a mine emergency: Modeling accumulation of evidence about emergencies through Instance-based Learning. In *Paper to be presented at the HFES 55th Annual Meeting*. Las Vegas, Nevada, USA.

Dutt, V., & Gonzalez, C. (2011). Making Instance-based Learning Theory Usable, Transparent, and Understandable: Instance-based Learning Tool. In *Demonstration to be presented at the HFES 55th Annual Meeting*. Las Vegas, Nevada, USA.

Dutt, V., Young -Suk, A., & Gonzalez, C. (2011). Cyber Situation Awareness: Modeling the Security Analyst in a cyber- attack scenario through Instance-based Learning. In *Paper presented at the 25th Annual WG 11.3 Conference on Data and Applications Security and Privacy (to appear in Lecture Notes in Computer Science 6818 (LNCS 6818), Springer)*. Richmond, VA, USA.

Gonzalez, C., **Dutt, V.**, & Martin, J. (2011) . Instance-Based Learning Model of a Continuum of Social Information in Conflict Situations. In *Paper presented at the 2011 International Conference on Behavioral Decision Making*. Herzliya, Israel.

Dutt, V., & Gonzalez, C. (2011) . Reducing the Linear Perception of Nonlinearity: Use of a Physical Representation. In *Paper presented United States Society for Ecological Economics Conference*. East Lansing, Michigan, USA.

Dutt, V., Martin, J., & Gonzalez, C. (2011). Modeling Social Information In Conflict Situations Through Instance- Based Learning Theory. In *Poster presented at the 33rd annual meeting of the Cognitive Science Society*. Boston, Massachusetts, USA.

Dutt, V. (2011). Why Do We Want to Delay Actions on Climate Change? Effects of Probability and Timing of Climate Consequences. In *Paper presented at Princeton Graduate Student Conference on Psychology and Policymaking*. Princeton, NJ, USA.

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Dutt, V., Cassenti, D. N., & Gonzalez, C. (2011). Modeling a Robotics Operator Manager in a Tactical Battlefield. In *Paper presented at the IEEE Conference on Cognitive Methods in Situation Awareness and Decision Support*. Miami Beach, FL, USA.

Dutt, V., Young -Suk, A., & Gonzalez, C. (2011). Cyber Situation Awareness: Modeling the Security Analyst in a

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Varun Dutt

cyber-attack scenario through Instance-based Learning. In *Poster presented at the 20th Behavior Representation in Modeling & Simulation (BRIMS) Conference*. Sundance Resort, Utah, USA.

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Cassenti, D. N., **Dutt, V.**, Gonzalez, C., Pomranky, R., & Hunn, B. (2011). Defining a Robotics Operator Manager's Responsibilities Using ACT-R. In *Paper presented at the 20th Behavior Representation in Modeling & Simulation (BRIMS) Conference*. Sundance Resort, Utah, USA.

Lejarraga, T., **Dutt, V.**, & Gonzalez, C. (2010). Instance-based Learning in Repeated Binary Choice. In *Paper presented at the 31st Annual Conference of the Society for Judgment and Decision Making*. St. Louis, MO, USA.

Gonzalez, C. & **Dutt, V.** (2010). Instance-based Learning: Integrating Decisions from Experience in Sampling and Repeated Choice Paradigms. In *Paper presented at 2010 Experience, heuristics, and choice: Prospects for bounded rationality workshop at Carnegie Mellon University*. Pittsburgh, PA, USA.

Arlo-Costa, H., Gonzalez, C., **Dutt, V.**, & Helzner, J. (2010). Decisions from Experience in Conditions of Uncertainty. In *Paper presented at 2010 Experience, heuristics, and choice: Prospects for bounded rationality workshop at Carnegie Mellon University*. Pittsburgh, PA, USA.

Dutt, V., & Gonzalez, C. (2010). Physical Representation and Linear Thinking on Climate Change. In *Paper presented at the 2010 Society of Risk Analysis Annual Meeting*. Salt Lake City, Utah, USA.

Gonzalez, C., & **Dutt, V.** (2010). Instance-based Learning Models of Training. In *Paper presented at the 54th Annual Meeting of the Human Factors and Ergonomics Society*. San Francisco, CA, USA.

Proctor R.W., Yamaguchi, M., Gonzalez, C., & **Dutt, V.** (2010). Spatial Compatibility Effects in a Complex Task Environment. In *Paper presented at the 2010 American Psychological Association Convention*. San Diego, CA, USA.

Walter, W., **Dutt, V.**, Gluck, K., & Reitter, D. (2010). Results and Lessons Learned from the 2009 DSF Modeling Comparison Challenge. In *Symposium presented at the 2010 Behavioral Representation in Modeling Simulation conference*. Charleston, SC, USA

Dutt, V., & Gonzalez, C. (2009). Human Control of Climate. In *Poster presented at the 2009 Summer Institute on Bounded Rationality*. Berlin, Germany.

Dutt, V., & Gonzalez, C. (2009). Climate Risk Communication: A Cure for People's Mental Models. In *Paper presented at the 2009 Society of Risk Analysis Annual Meeting*. Baltimore, MD.

Lebiere, C., Gonzalez, C., **Dutt, V.**, Warwick, W. (2009). Predicting cognitive performance in open-ended dynamic tasks a modeling comparison challenge. In *Symposium at 2009 9th International Conference on Cognitive Modeling*. Manchester: UK.

Gonzalez, C., **Dutt, V.**, Healy, A., Young, M. & Bourne, L. (2009). Comparison of instance and strategy models in ACT-R. In A. Howes, D. Peebles, R. Cooper (Eds.), *9th International Conference on Cognitive Modeling – ICCM2009*, Manchester, UK.

Dutt, V., Yamaguchi, M., Gonzalez, C., & Proctor, R. (2009). An Instance-Based Learning Model of Stimulus-Response Compatibility Effects in Mixed Location-Relevant and Location-Irrelevant Tasks. In *Poster presented at 2009 9th International Conference on Cognitive Modeling*. Manchester: UK.

Dutt, V., & Gonzalez, C. (2009). A Model of Human Perceptions of Climate Change. In *Paper presented at American Society for Engineering Education (ASEE) Spring 2009 Northeast Conference*. Bridgeport, CT.

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- Dutt, V., & Gonzalez, C.** (2009) . How do we perceive carbon-dioxide lifetimes? In *Paper presented at USSEE 2009 Conference*. Washington D.C., MD.
- Dutt, V., & Gonzalez, C.** (2009). Human “Mis”- perceptions of Climate Change. In *Paper presented at the HFES 53rd Annual Meeting*. San Antonio, TX.
- Dutt, V., & Gonzalez, C.** (2008). Human Perceptions of Climate Change. In *Paper presented at the 26th International Conference of the System Dynamics Society*. Athens, Greece.
- Dutt, V., & Gonzalez, C.** (2008). Human Perceptions of Climate Change. In *Paper presented at the 3rd Annual - Student Industrial Ecology Conference*, University of Pittsburgh – Benedum Hall, Kresge Auditorium Rm. 1175, Pittsburgh, PA.
- Dutt, V., & Gonzalez, C.** (2008). Human Perceptions of Climate Change. In *Paper presented at the 2008 American Psychological Association Convention’s Symposium Decision Making in Dynamic and Complex Environments*. Boston, MA, USA.
- Dutt, V., & Gonzalez, C.** (2008). Instance and strategy based models in ACT- R. In *Proceedings of 2008 Modeling, Simulation & Gaming (MS&G) Student Capstone Conference* (pp. 19). Suffolk, VA: ODU-VMASC.
- Dutt, V., & Gonzalez, C.** (2008). Instance and Strategy ACT-R models of choice in a dynamic control task: a model comparison story. *Proceedings of 2008 Fifteenth Annual Workshop and Summer School* (pp. 43). Pittsburgh, PA: ACT-R RESEARCH GROUP.
- Dutt, V., & Gonzalez, C.** (2008). Risk Perceptions of Climate Change. In *Paper presented at the 2008 Society of Risk Analysis Annual Meeting*. Boston, MA.
- Young, M. D., Healy, A. F., Gonzalez, C., **Dutt, V.**, & Bourne, L. E., Jr. (2008). Effects of training with added relevant responses on RADAR detection. *The Experimental Psychology Society and the Psychonomic Society*, Chicago, IL.
- Dutt, V., & Gonzalez, C.** (2007). Slope of inflow impacts dynamic decision making. In *Paper presented at the 25th (2007) International Conference of the System Dynamics Society*. Boston, MA, USA.
- Gonzalez, C., & **Dutt, V.** (2007). Learning to control a dynamic task: A system dynamics cognitive model of the slope effect. In Paper presented at the 8th International Conference on Cognitive Modeling, Ann Arbor, MI, 26th July 2007, 61-66.
- Dutt, V., Schmerl, B., & Garlan, D.** (Unpublished). Discovering Communication Protocols between Software Elements (runtime objects) in Software Architectures. Part of Independent Study taken when pursuing Master's in Software Engineering, Carnegie Mellon University, Pittsburgh, PA.
- Dutt, V. & Kumar, S.** (2006). Learning Transistor Characteristics using Neural Networks. *Published in ECCS 2006*. Patiala, India.
- Dutt, V. & Thiagaraj, V.** (2005). The Concept of Classification in Data Mining using Neural Networks. *Published in NCBC 2005*. Patiala, India.

EDITORSHIPS

- Lead Guest Editor, Special Collection on IoT and Landslides, <https://journals.sagepub.com/page/dsn/collections/special-issues/iot-and-landslides>
- Associate Editor, Highlights in Psychology for Clinical Settings: Military Personnel and Veteran Mental Health, <https://www.frontiersin.org/research-topics/45845/>
- Associate Editor, *Frontiers in Cognitive Science* journal, <http://loop.frontiersin.org/people/48650/overview>
- Review Editor, *Frontiers in Neuroscience* journal, <http://loop.frontiersin.org/people/48650/overview>
- Editor, Special Issue on “Human decision-making in combat situations involving traditional and

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- immersive visual technologies” in *Frontiers in Psychology (Cognitive Science)*
- Editor, Special Issue on “Adversarial Cybersecurity” in *Cybersecurity (Springer)*
- Editor, Special Issue on “Applications of Cognitive Approaches to Cyber Security” in *Frontiers in Cognitive Science* journal.
- Lead Author for Chapter 2 on “Integrated Risk and Uncertainty Assessment of Climate Change Response Policies” in Intergovernmental Panel on Climate Change (IPCC)’s 5th Assessment Report (AR5): <http://mitigation2014.org/contributor/chapter-2>
- Knowledge Editor, English Financial Daily, *Financial Chronicle*: <http://www.mydigitalfc.com/>

GRADUATE COMMITTEES

STUDENT NAME	POSITION	DATES
Neha Sharma	Advisor, Ph.D. Doctoral Committee	Graduated
Palvi Aggarwal	Advisor, Ph.D. Doctoral Committee	Graduated
Abhijeet Seth	Advisor, M. Tech. Thesis Committee	Graduated
Shivendra Sangar	Co-Advisor, Ph.D. Doctoral Committee	Graduated
Medha Kumar	Advisor, Ph.D. Doctoral Committee	Graduated
Pratik Chaturvedi	Advisor, Ph.D. Doctoral Committee	Graduated
Akash K Rao	Advisor, M.S. Academic Progress Committee	Graduated
Zahid Maqbool	Advisor, Ph.D. Doctoral Committee	Graduated
Abhinav Choudhury	Advisor, Ph.D. Doctoral Committee	Graduated
Shruti Kaushik	Advisor, Ph.D. Doctoral Committee	Graduated
Praveen Kumar	Advisor, M.S. Academic Progress Committee	Graduated
Ankush Pathania	Advisor, M.S. Academic Progress Committee	Graduated
Tushar Saini	Advisor, M.S. Academic Progress Committee	Graduated
Harsh Katakwar	Advisor, M.S. Academic Progress Committee	Graduated
Shashank Uttrani	Advisor, M.S. Academic Progress Committee	Graduated
Gitanshu Choudhary	Advisor, Ph.D. Doctoral Committee	Jan 2020 – Present
Megha Sharma	Advisor, M.S. Academic Progress Committee	Aug 2021 – Present
Aadhaar Gupta	Advisor, M.S. Academic Progress Committee	Aug 2021 – Present
Akash K Rao	Advisor, Ph.D. Doctoral Committee	Aug 2021 – Present
Praveen Kumar	Advisor, Ph.D. Doctoral Committee	Jan 2021 – Present
Shashank Kapoor	Advisor, M.S. Academic Progress Committee	Aug 2021 – Present
Yashwant Kumar	Advisor, M.S. Academic Progress Committee	Aug 2021 – Present
Sahil Sankhayan	Advisor, Ph.D. Doctoral Committee	Feb 2022 – Present

SELECTED UNDERGRADUATE AND GRADUATE THESIS PROJECTS

Project Name: Phishing Attack Detection via ML and Cognitive algos and its comparison to human data.

Student: Aditya Kumar, Megha Sharma

Project Name: Replicating Human Cognitive Behavior on Robots Models using ACT-R Cognitive Architecture for Search-and-Retrieve Mission in Virtual Environments.

Students: Ravi Pratap Yadav, Aadhar Gupta, Shashank Kapoor

Project Name: Human Cognitive Enhancement via tDCS and Performance forecasting via Machine Learning

Students: Harsh Gahlot, Akash Rao, Vishnu K Menon

Project Name: Examining the effect of 360 VR video surrounding on efficacy of mantra meditation.

Students : Srijan Singh, Durgesh Ameta.

Project Name: Calculating the Evaporation potential of the soil through Machine Learning

Students: Sucheta Panda, Praveen Kumar

Project: Generative Adversarial Networks Model for Soil Movement Prediction

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Student: Vasu Gupta; Vyom Goel

Project: Evaluating the effectiveness of deception technology against different types of cyber-attacks in a deception game

Student: Yashika Baan

Project: Amalgamating cognitive and reinforcement learning models for replicating cognitive behavior for UGV-based search-and-rescue operations in a virtual environment

Student: Saransh Jain, Ashwin Ginoria

Project: Multi-step forecasting of pollutant parameters using multivariate data

Student: Vinayak Gupta

Project: Development of machine-learning models for glucose predictions from differential equation models.

Student: Aashima

Project: Development of machine-learning models for accelerometer vibration analyses.

Student: Sanchit Yadav

Project: Development of machine-learning models on soil movement predictions.

Student: Pavan and Raj Kumar

Project: Development of machine-learning models on air-pollution predictions.

Student: Suraj

Project: AI models of exploration in VR-based built environments.

Student: Aditya Arora and Aman Saxena

Project: Development of time-series models for glucose predictions from differential equation models.

Student: Mukul and Karan (graduated)

Project: Development of machine-learning models for air-quality predictions.

Student: Gagandeep (graduated)

Project: Development of machine-learning models for soil movement predictions.

Student: Bharat Lodhi (graduated)

Project: Decision-making in cybersecurity games.

Student: Suryavanshi (graduated)

Project: Decision-making in climate change games.

Student: Sylvia Mittal (graduated)

Project: Investigating deep-learning models to forecast healthcare-related expenditures

Student: Pankaj Sheoran (graduated)

Project: Applying deep-learning to predict debris-flow at Tangni landslide on NH-58

Student: Abhijeet Sharma (graduated)

Project: Tool health monitoring using IoT and machine-learning

Student: Rushil Singhal and Amit (graduated)

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Project: Developing a real-time cyber-security environment for studying deception in the laboratory
Student: Aksh and Vaibhav (graduated)

Project: Development of signalling system for narrow roads.
Student: Maeghel Puri, Partik Rajput, and Anindya
(graduated)

Project: Patient Finder Application.
Student: Amod Kumar Choudhary and Vinay Goel (graduated)

Project: Patient Journey Application. Student:
Saksham Bathla and Kapardi Trivedi
(graduated)

Project: Developing IVD, VR and AR defense applications in Unity.
Student: Priyanka (graduated)

Project: Evaluating different road traffic scenarios in a Computer-Based game.
Student: Sandesh Kumar Singh and Kumar Mehta (graduated)

Project: Visualization of Big Data in Pharma.
Student: Anzer Moid and Kaustubh Mallik (graduated)

Project: Development of a realistic battle scenarios.
Student: Jibraan Singh (graduated)

Project: Emotion-based Social Networking App for Android.
Student: Chinmay Krishna (graduated)

Project: Investigating human understanding of Climate Change via Dynamic Climate Change Simulator.
Student: Afser Reza and Rishab Sahu (graduated)

Project: When Cyber Attacker Plays Nash equilibrium in Dynamic Security Game.
Student: Nidhi Manoj Makhijani (graduated)

Project: Effect of environmental and human conditions and human driving behavior.
Student: Vinod Kumar (graduated)

Project: Cognition in an IVD environment.
Student: Chandan Satyarthi (graduated)

Project: Affective, Expressive, and Cognitive Decision Making through Emotiv Epoc
Student: Mahesh Yadav, Khushali Modi, Divya Goyal (graduated)

Project: ACT-R Models of Driving Behavior
Student: Ajay Kumar, Jai Prakash

Project: Cyber Situation Awareness: Game Theoretic Analysis of Cyber Attacks
Student: Saumya Singh, Antra Grover

Project: Cyber Situation Awareness: Testing the Effects of Similarity and Attack Strategy on Cyber Attack Detection
Student: Amanjot Kaur (graduated)

Project: Cyber Situation Awareness: Testing the Effects of Tolerance and Attack Strategy on Cyber Attack Detection

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Student: Aman Arora (graduated)

Project: Cyber Situation Awareness: Testing the Effects of Recency and Inertia on Cyber Attack Detection

Student: Ramakrishna Reddy and Basava Kanaparthi (graduated)

Project: Effects of feedback, social norms, and competition on energy conservation behavior

Student: Ishansh Singh, Shammash Mohyaddin, Sunanda Yadav, Devang Moyal (graduated)

Project: Decisions from experience in sampling: Sampling strategies, sample size, and final choice

Student: Pankaj Sharma, Nikhil Kumar Gupta, Ashish Gupta (graduated)

Project: Charting Indigenous Populations in the World (co-advising with Prof. Rajeshwari Dutt)

Student: Devinder Yadav, Shekhar Solanki (graduated)

Project: Archiving the history of IIT, Mandi (co-advising with Prof. Rajeshwari Dutt)

Student: Nishant Goyal, Divya Gandhi (graduated)

AD-HOC REVIEWER OF JOURNALS

Journal of Behavioral Decision Making, Journal of Environmental Psychology, Global Environment Change, System Dynamics Review, Organizational Behavior and Human Decision Processes, Journal of Cognitive Engineering and Decision Making, Cognitive Systems Research, Environmental Science & Policy, Information Fusion, Frontiers in Decision Neuroscience, Frontiers in Cognitive Science.

AWARDS, HONORS AND INVITED TALKS

HONOR	YEAR
invitation to Spencer Foundation Convening	2023
Incubation of Intiot Services Pvt Ltd via IIT Madras with a 50 lakhs grant	2023
Won 3rd prize worth Rs. 50,000 on Best Entrepreneurship Award 2022 IIT Mandi's first student-faculty incubated startup 'Intiot Services PVT. LTD' under the Chief Minister's Startup, Innovation Project, and New Industries Scheme.	2022
Presenter in the Indo-US Joint Task Group Workshop, INMAS, DRDO, Delhi	2021, 2022
SKOCH Award (Gold), Safety & Security for Landslide Monitoring and Warning System	2020
Organizer, UKIERI – DST international workshop on adversarial cybersecurity	2020
ACT-R tutorial as part of the One Week Short Course/FDP on Cognition and Computation, IIT Roorkee	2020
Member of Editorial Board of Management and Business Review (MBR) journal	2019
Founder of first faculty-led start-up at IIT Mandi, IoTs	2019
Organizer, Winter School on Cognitive Modeling, IIT Mandi	2019, 2020, 2021, 2022
Senior Member, IEEE	2018
3rd Prize, Development of Innovative prototypes for disaster risk reduction, HP Government	2018
Special Topics Editor, Frontiers in Cognitive Science	2017
Member of Program Committee of IEEE 2017 International Symposium on Computational and Business Intelligence (ISCBI 2017)	2017
Member of Program Committee of IEEE Cyber Incident 2017: International Conference On Cyber Incident Response, Coordination, Containment & Control Member of Program Committee of IEEE Social Media 2017: International	2017
Conference On Social Media, Wearable And Web Analytics Best student paper award at AHFE 2016	2016
Review Editor, Frontiers in Decision Neuroscience	2016
Member of Program Committee of IEEE Cyber SA 2016, London, UK	2016

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Best paper award in IEEE International Conference on Cyber Situational Awareness, Data Analytics and Assessment (CyberSA 2015)	2015
Review Editor, <i>Frontiers in Cognitive Science</i>	2015
Member of Program Committee for ACM IUI 2015	2015
Member of Technical Committee of the Confluence: The Next Generation Information Technology Summit 2014	2014
Invited speaker at the Energy and Sustainability Conference ISB Mohali	2014
Invited for the IEEE/PES Talk on "Decisions from Experience reduce Misconceptions on Climate Change" at Pittsburgh, USA	2014
Member of Technical Program Committee/Advisory Committee for the 2013 IEEE International Conference on MOOC, Innovation and Technology in Education (MITE)	2013
Technical Theme Chair for Theme V: Economics of Knowledge Management at the 2013 IEEE Conference on Information Management in the Knowledge Economy (IMKE)	2013
Invited for the United Nation's Fourth Lead Author Meeting (LAM4) on IPCC (WG III) 5th Assessment Report (AR5) in Addis Ababa, Ethiopia	2013
Invited talk at a 2-day workshop on "Decision Making and the Environment" at University of Heidelberg, Germany	2013
Lead Author for Chapter 2 on "Integrated Risk and Uncertainty Assessment of Climate Change Response Policies" in IPCC (WG III) 5th Assessment Report (AR5)	2013
Reached the final round of MIT Technology Review Young Innovators Under 35 Awards, 2013	2012-2015
Keynote talk in the plenary session (titled "Promising Young Indian Contributors") at NAOP	2012
Two Papers accepted in the journal <i>Psychological Review</i>	2011, 2012
Marquis Who's Who of the World	2006 – Present
1000 Greatest Minds of 21st Century	2008
Runner-up prize in the Market Entry Prediction Competition,	2008
Tutorial presenter at BRIMS 2011 Conference, Sundance Resort, UT	2011
Panel discussion at BRIMS 2010 Conference, Charleston, SC	2010
Talk on VB-ACT-R Tutorial, RMPA Conference, Denver, CO	2010
Talk in EESM Seminar Steinbrenner Institute, Carnegie Mellon	2009
Talk at Dynamic Decision-Making Lab, Carnegie Mellon	2007, 2009, 2010, 2011
Talk at Carnegie Mellon's Graduate Student Appreciation Week 2011	2011
Tutorial Presenter and Talk at HFES 2011	2011

<http://sites.google.com/site/gpredcomp/8-competition-results-and-winners>

ACTIVITIES AND AFFILIATIONS

Senior member of Institute of Electrical and Electronics Engineers (IEEE), Inc, USA (www.ieee.org)
Member of System Dynamics Society (SDS), USA (<http://www.systemdynamics.org>)
Member of Society of Risk Analysis (SRA), USA (<http://www.sra.org/>)
Member of Division 34 [Population and Environmental Psychology], American Psychological Association, USA (<http://www.apa.org/divisions/div34/>)
Member of Society of Judgment and Decision Making, USA (www.sjdm.org)

SELECTED MEDIA COVERAGE

Please see: <https://rb.gy/nhd2lr>

REFERENCES

Dr. Cleotilde Gonzalez Professor Dept. Social & Decision Sciences Carnegie Mellon University Porter Hall, Pittsburgh, PA 15213	Dr. Deepak Garg Professor and Head of Department Department of Computer Engineering Bennett University Greater Noida, India-201310	Dr. Rajesh Kumar Bhatia Professor Computer Science and Engineering PEC University of Technology Sector 12, Chandigarh 160012
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