SALONI **DASH**

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Research Interests

Social Computing, Natural Language Processing, Human-Computer Interaction, Machine Learning, Fairness & Explainability, Data Science

Education

Present – September 2022 | **University of Washington, Seattle, USA**
PhD Information Science

August 2020 – August 2015 | **Birla Institute of Technology and Science Pilani, Goa, India**
M.Sc.(Hons.) Mathematics
B.E.(Hons.) Computer Science
Cumulative GPA : 9.17

Employment

June 2024 – September 2024 | **Microsoft Research (MSR), Redmond, USA**
Mentor: Madeleine Daepp,
Multilingual Multicultural Red-Teaming Large Language Models for Misinformation Harms
Red-Teaming | Misinformation | generative AI

August 2022 – August 2020 | **Microsoft Research (MSR), Bengaluru, INDIA**
Mentors: Joyojeet Pal, Amit Sharma, Monojit Choudhury
Identifying & characterizing influential actors on Twitter who enable the spread of polarization, dangerous speech and disinformation during political crises in India. [ICWSM'22, CSCW'21, COMPASS'22, WEBSCI'22]
Evaluating & mitigating biases in image classifiers using counterfactual generation. [AAAI'21, WACV'22]
POLITICICAL POLARIZATION | DANGEROUS SPEECH | DISINFORMATION NETWORKS | INFLUENCERS | COUNTERFACTUAL GENERATION | FAIRNESS | EXPLAINABILITY

Select Publications

Saloni Dash, Yiwei Xu, Emma Spiro *"AI-Paraphrasing Increases Perceptions of Social Consensus & Belief in False Information"* Under Review [PDF]

Saloni Dash, Arshia Arya, Sukhnidh Kaur, Joyojeet Pal *"Narrative Building in Propaganda Networks on Indian Twitter"* 14th ACM Web Science Conference 2022 [PDF]

[Hon. Mention For Best Paper Award] **Saloni Dash**, Rynaa Grover, Gazal Shekhawat, Sukhnidh Kaur, Dibyendu Mishra, Joyojeet Pal *"Insights Into Incitement: A Computational Perspective on Dangerous Speech on Twitter in India"* ACM SIGCAS/SIGCHI Conference on Computing and Sustainable Societies (COMPASS) 2022 [PDF]

Saloni Dash, Dibyendu Mishra, Gazal Shekhawat, Joyojeet Pal *"Divided We Rule: Influencer Polarization on Twitter During Political Crises in India"* International Conference on Web and Social Media (ICWSM) 2022 [PDF]

Saloni Dash, Vineeth Balasubramanian, Amit Sharma *"Evaluating and Mitigating Bias in Image Classifiers: A Causal Perspective Using Counterfactuals"* IEEE Winter Conference on Applications of Computer Vision (WACV) 2022 [PDF]

[workshop paper] **Saloni Dash**, Gazal Shekhawat, Syeda Zainab Akbar, Joyojeet Pal *"Extremism & Whataboutism: A Case Study on Bangalore Riots"* Extremism Research Workshop, Conference on Computer Supported Cooperative Work and Social Computing (CSCW) 2021 [PDF] [PPT]

Saloni Dash, Andrew Yale, Isabelle Guyon, Kristin P. Bennett *"Medical Time-Series Data Generation using Generative Adversarial Networks"* International Conference on Artificial Intelligence in Medicine (AIME), pp. 382-391. Springer 2020. [PDF] [PPT]

Andrew Yale, **Saloni Dash**, Ritik Dutta, Isabelle Guyon, Adrien Pavao, Kristin P. Bennett *"Generation and Evaluation of Privacy Preserving Synthetic Health Data"* Neurocomputing 2020 [PDF]

[WORKSHOP PAPER] **Saloni Dash**, Ritik Dutta, Isabelle Guyon, Adrien Pavao, Andrew Yale, Kristin P. Bennett *"Synthetic Event Time Series Health Data Generation"* Machine Learning For Health (ML4H) Workshop, NeurIPS 2019 [PDF] [POSTER]

Honours and Awards

Population Health Initiative Tier 1 Pilot Research Grant — Population Health, University of Washington
Awarded $23,837 for a period of one year
Understanding the Role of AI- Integrated Information Seeking Tools in Users' Evaluation of Health (Mis)information

Innovation Fund — Center for an Informed Public, University of Washington
Awarded $23,465 for a period of one year
Modeling The Role of Large Language Models In Amplifying Strategic (Dis)Information Campaigns and Examining Its Persuasive Effects

UW Graduate School Top Scholar Fellow — Information School, University of Washington
Awarded $5,000 for a period of two years
This honor is given to a very select number of admitted Ph.D. students who demonstrate scholarly excellence and potential.

INSPIRE Scholarship — Gov. of India, '15
Awarded INR 60,000 per year for a period of 5 years
Granted after securing 99.6 percentile in JEE (Joint Entrance Examination) Mains and 99.4 percentile in C.B.S.E. Board Exams.

Research Experience

August 2020 – July 2019 | **Rennselaer Polytechnic Institute, New York, USA**
Mentors: Isabelle Guyon, Kristin Bennett
Joint modelling of static and temporal variables of medical time-series data using GANs. [NEURIPS'19, AIME'20, ESANN'21]
TIME-SERIES | MEDICAL DATA | GENERATIVE MODELLING

April 2019 – September 2018 | **ChaLearn,California,USA**
Mentors: Isabelle Guyon, Kristin Bennett
Examined the feasibility of generating synthetic health data that maintained utility as well as privacy standards, including differential privacy. [ESANN'19, NEUROCOMPUTING'20, AIDR'20, BIS'20]
HEALTHCARE | WASSERSTEIN GAN | DIFFERENTIAL PRIVACY

August 2018 – March 2018 | **INRIA, Paris, France**
Mentor: Isabelle Guyon
Studied privacy preservation techniques like k-anonymization, differential privacy etc. and their applications to medical data. [PPT]
QUANTIFYING PRIVACY | ADVERSARIAL ATTACKS

July 2018 – May 2018 | **Karlsruhe Institute of Technology, Karlsruhe, Germany**
Mentor: Prof. Dr. J. Marius Zöllner
Investigated deep reinforcement algorithms for road intersection navigation of autonomous vehicles. Developed an OpenAI gym wrapper for the traffic simulator SUMO. [GITHUB]
SELF-DRIVING CARS | DEEP REINFORCEMENT LEARNING | OPENAI GYM

July 2017 – May 2017 | **Zero Labs AI, Pune, India**
Research Intern | Mentor: Kirit Thadaka
Developed an end-to-end automatic speech recognition system which was primarily composed of two neural networks – a speech to phoneme network and phoneme to words network. [GITHUB]
SPEECH RECOGNITION | CTC LOSS | TIMIT CORPUS

Reviewer Experience

CHI'24, CSCW'23, WACV'22, EMNLP'21, ICML'21, JAMIA, NeurIPS'19

Teaching and Leadership Roles

Algebra-II, Department of Mathematics, BITS Goa Jan'19 - May'19
Teaching Assistant

Measure Theory, Department of Mathematics, BITS Goa Jan'18 - May'18
Teaching Assistant

Probability and Statistics, Department of Mathematics, BITS Goa Aug'17 - Dec'17
Teaching Assistant

TEDx BITS Goa Aug'17 - May'18
Content Head

Relevant Coursework

Machine Learning, Game Theory, Neural Networks and Fuzzy Logic, Graph Theory, Functional Analysis, Measure Theory, Algebra, Number Theory, Topology, Object Oriented Programming, Data Structures and Algorithms, Computer Architecture.

Select Projects

Simulating Logic Gates Using Mcculloch Pitt's Neurons [github] Feb'19-May'19
The First Computational Neuron with Dr.Basabdatta Sen Bhattacharya

› A Python animation illustrating the McCulloch Pitts model of the neuron. Includes an interactive GUI used to get neuronal weights from the user to construct logic gates from the McCulloch Pitts neuron..

Multi-Agent Reinforcement Learning for Cooperative Hunting Scenarios [github] Sep'18-Nov'18
Using Nash-Q Learning with Dr. Himadri Mukherjee

› Examined the equilibrium behavior of two predators hunting a prey. It was modelled as a two player strategic game with actions *Cooperate* or *Kill*.

Skills

Programming Languages	Python, Java, C, C++, MySQL, R, HTML, Verilog, x86 Assembly Language
Frameworks	Jupyter, iPython, MATLAB, Mathematica, Eclipse, LaTeX, Git
Technical Libraries	Tensorflow, Keras, PyTorch, NumPy, Sci-kit Learn, Pandas, OpenCV, Matplotlib, NLTK,Gensim
Operating Systems	Ubuntu, Windows
Spoken Languages	English, Hindi, Odiya, Marathi