

6th John McCarthy Memorial Lecture

Organized by

IEEE CIS/GRSS Joint Chapter of Hyderabad Section

In collaboration with

Department of IT, Vasavi College of Engineering, Ibrahim Bagh, Hyderabad

December 18, 2021

Time: 15:00 - 16:30 Hrs (IST)

TOPIC: Do your data behave gently to your Machine Learning algorithms? What if not?

By: Dr Swagatam Das, Associate Professor, EUSU, ISI Kolkata

Venue: PIM Seminar Hall, Vasavi College of Engineering, Ibrahim Bagh, Hyderabad

Abstract: Most of the traditional supervised learners assume their input data to be very gentle in terms of similar underlying class distributions, balanced size of classes, the presence of a full set of observed features in all data instances, etc. Data from real life, however, show up with various forms of irregularities that are, very often, sufficient to confuse a classifier, thus degrading its ability to learn from the data. In this talk, we will provide a bird's eye view of such data irregularities, beginning with a taxonomy and characterization of various distribution-based and feature-based irregularities. Subsequently, we will discuss the notable and recent approaches that have been taken to make the existing shallow as well as deep learning classifiers robust against such irregularities. Finally, we will unearth a number of interesting future research avenues that are equally contextual with respect to the regular as well as deep machine learning paradigms.

Brief Bio of the Speaker: Swagatam Das received the B. E. Tel. E., M. E. Tel. E (Control Engineering specialization) and Ph. D. degrees, all from Jadavpur University, India, in 2003, 2005, and 2009 respectively. He is currently serving as an associate professor and Head of the Electronics and Communication Sciences Unit of the Indian Statistical Institute, Kolkata, India. His research interests include evolutionary computing and machine learning. Dr. Das has published more than 300 research articles in peer-reviewed journals and international conferences. He is the founding co-editor-in-chief of Swarm and Evolutionary Computation, an International Journal from Elsevier. He has also served as or is serving as the associate editors of the IEEE Transactions on Cybernetics, Pattern Recognition (Elsevier), Neurocomputing (Elsevier), Information Sciences (Elsevier), IEEE Trans. on Systems, Man, and Cybernetics: Systems, and so on. He is an editorial board member of Information Fusion (Elsevier), Progress in Artificial Intelligence (Springer), Applied Soft Computing (Elsevier), Engineering Applications of Artificial Intelligence (Elsevier), and Artificial Intelligence Review (Springer). Dr. Das has 24,500+ Google Scholar citations and an H-index of 74 till date. He has been associated with the international program committees and organizing committees of several reputed international conferences including NeurIPS, AAAI, AISTATS, ACM Multimedia, BMVC, IEEE CEC, GECCO, SEMCCO etc. He has acted as guest editors for special issues in journals like IEEE Transactions on Evolutionary Computation and IEEE Transactions on SMC, Part C. He is the recipient of the 2012 Young Engineer Award from the Indian National Academy of Engineering (INAE). He is also the recipient of the 2015 Thomson Reuters Research Excellence India Citation Award as the highest cited researcher from India in Engineering and Computer Science category between 2010 to 2014. In 2021, he received the best Associate Editor Award for IEEE Transactions on Cybernetics from the IEEE Systems, Man, and Cybernetics Society.



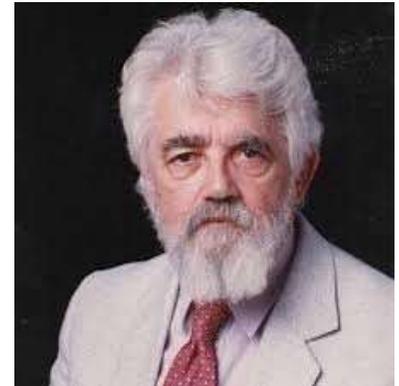
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About John McCarthy

John McCarthy was born in Boston, Massachusetts, in 1927. He received a BS in mathematics from Caltech (1948) and a PhD, also in mathematics, from Princeton University (1951). McCarthy was a pioneer in the fields of artificial intelligence (AI), computer science, and interactive computing systems.

McCarthy coined the term “AI” in 1955 in connection with a proposed summer workshop at Dartmouth College, which many of the world's leading thinkers in computing attended. As part of refining his ideas about AI, he also invented the programming language lisp in 1958. While at MIT, McCarthy proposed a method of distributing computer resources known as timesharing, in which many individual users could appear to have sole access to an expensive mainframe computer system. Timesharing became a dominant computing paradigm in the 1960s and 1970s, and MIT led much of the early work, influenced by McCarthy's ideas. In 1965, McCarthy became the founding director of the Stanford Artificial Intelligence Laboratory (SAIL), where research was conducted into machine intelligence, graphical interactive computing, and autonomous vehicles.



John McCarthy
1927 - 2011

McCarthy was chosen as the 1971 winner of the ACM Turing Award, and was awarded the Kyoto Prize (1988) and the National Medal of Science (1990). He passed away in 2011.

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Brief about the CIS Chapter of Hyderabad Section: The CIS Hyderabad Chapter was founded in 2011 by Dr. Amit Kumar as the founder chair. Under the able leadership of Dr. Amit, the chapter has received the Outstanding CIS chapter award in 2013. Prof. Atul Negi chaired the chapter from 2013 to 2015. Dr. Naresh Kumar has chaired the chapter during 2016-2018. Under his leadership a computational intelligence, Geoscience and Remote Sensing societies joint chapter was envisaged and formed in 2017. The chapter has got yet another outstanding CIS chapter award for the activities done in 2016. Currently, Dr Mousmi Aajay Chaurasia is leading the team, continuing the best practices of the Chapter.

About JML Series: In remembrance of the great scientist John McCarthy, the CIS chapter of IEEE Hyderabad Section conducts Memorial Lecture annually this lecture since 2016.

- First JML on "Artificial Intelligence: The Past, The Present and The Future", was delivered by (late) Prof. C. A. Murthy, Fellow INAE, Professor, ISI Kolkata, on 27th Nov 2016 at Hyderabad.
- Second JML on "Recent developments in Artificial Intelligence and Potential Applications", was delivered by Prof. Raghu Krishnapuram, Fellow IEEE, on 18th November 2017.
- Third JML on "Non iterative Learning Algorithms", was delivered by Dr. P.N. Suganthan, Fellow IEEE, Professor, Nanyang Technological University, Singapore, on 22 Nov 2018.
- Fourth JML was held on "Artificial Intelligence: An Unfinished Revolution" by Prof. M. Vidyasagar, Fellow, IEEE, on 14-Nov-2019.
- Fifth JML was delivered by Prof. Manuel Roveri, Politecnico di Milano, Italy on "TINYML: THE AI SOLUTION FOR THE COMPUTING EVERYWHERE" on 17 Dec 2020.