NEWSLETTER
ROBERT BOSCH CENTRE FOR DATA SCIENCE AND ARTIFICIAL INTELLIGENCE

Artificial Intelligence (AI) & Machine Learning (ML) Conclave
Tuesday, October 23, 2018 | IIT Madras

RBCDSAI IITM

4th QUARTER, 2018

"Robert Bosch Center for Data Science hosts its' Conclave bringing together startups, academia, industry and Govt officials"

CHENNAI,
23rd October 2018

Indian Institute of Technology Madras undertook a major effort to give a boost to the Artificial Intelligence (AI) and Machine Learning (ML) sectors in Chennai.

The Robert Bosch Center for Data Science and Artificial Intelligence, IIT Madras, organized the 'Artificial Intelligence and Machine Learning Conclave' focused on understand cutting-edge technology and innovation in the field with participation from top technology firms and think-tanks including Google, Amazon, Foxconn and TVS group among others.

The conclave aimed at generating a greater realization of the AI/ML ecosystem in and around Chennai and facilitated the stakeholders to have a brainstorming session about the needs for this ecosystem to thrive and grow further.

Prof Bhaskar Ramamurthi, Director, IIT Madras, inaugurated the Conclave, which was held on 23rd October 2018. **This event for the first time brought together a significant number of AI/ML deep technology start-ups in Chennai in a single platform. This will lead to greater awareness of the possibilities in this space** among the various companies as well as students and academics from various colleges. A specific outcome that we are looking forward to is a greater synergy between the participants and increased collaboration among the different stake holders.

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"Delivering the inaugural address, Mr. Santhosh K. Misra IAS, Commissioner (e-Governance) and CEO, Tamil Nadu e-Governance Agency"

He highlighted the importance of AI in the development initiatives of TNeGA in Agriculture, Healthcare and Education.

He spoke about the importance on AI and analytics in the Tamil Nadu e-Governance and elaborated how the Tamil Nadu Government is investing and partnering with education institution such as IIT Madras to enhance the data driven governance through AI and blockchain initiatives in agriculture, health and education sectors.

Ms Anna roy, Advisor NITI Aayog, spoke on collaboration between Industry and Academia, the importance of AI Skilling and NITI Aayog Initiatives on AI Skilling **Addressing the Conclave, Prof B. Ravindran, Head, Robert Bosch Centre for Data Science and AI, IIT Madras, said,** "The energy and enthusiasm from the participants showed how vibrant the AI/ML community is in Tamil Nadu. As an outcome of this event, we are looking to accelerate the Government-Industry-Academia partnership in developing the AI/ML ecosystem."

The conclave had a tremendous response with more than 250 attendees and was a platform for Government Representatives, Business Leaders, Data Science practitioners and Students to share emerging trends, challenges and best practices in the exciting domain **Speaking later, Mr.Venkat Viswanathan, Founder and Chariman, Latent View,** focused on what has been done in the industry so far and provided with used cases on how Latentview Analytics developed innovative platform for social media analytics for beauty giant such as Revlon and Auto giant BMW. Also, best practices of companies world over, that are using AI in their digital transformation journey.

A power packed panel discussion on 'Skills to succeed in an AI-driven digital world' was also held with thought leaders from Industry and Academia. The discussion provided insights on skills required to succeed in a AI Driven world. Also number of start-ups showcased their AI / ML products and platforms that solve a range of business problems across industries.

Prof.Kamakodi accoladed with 'ACCS–CDAC Foundation Award'

ACCS, the Advanced Computing and Communications Society, announced Prof. V. Kamakoti of the Indian Institute of Technology Madras as the winner of the prestigious ACCS-CDAC Foundation award for 2018. The Award recognizes Prof. Kamakoti Veezhinathan for his contributions in the fields of VLSI design and computer architecture resulting in the development of India's first RISC-V family of processors. The ACCS-CDAC Foundation Award carries a cash prize of Rs. 100,000/-, and a citation, presented at the inaugural session of the annual Advanced Computing and Communications Conference (ADCOM 2018) at The International Institute of Information Technology Bangalore (IIITB) on 21st September 2018. ACCS-CDAC Award is given to individuals with outstanding contributions and accomplishments that have had a significant and demonstrable effect on the practice of computing and communications.

Indian Institute of Technology Madras, Tuesday signed a memorandum of understanding with the Tamil Nadu e-Governance Agency here, to enhance data driven governance in education, health care and agriculture sectors.

IIT Madras sign MoU with TN e-Governance agency

We believe that by teaming up with the TNeGA we can contribute towards multiple pillars of the government, covering areas such as education, health-care and agriculture," IIT Madras department of management studies assistant professor Nandan Sudarsanam said

Commenting on the tie-up with IIT Madras, TN e-Governance Agency CEO, Santosh K Misra said, " Tamil Nadu Government is the first state government to collaborate with IIT-M for harnessing the power of artificial intelligence and blockchain technology in areas of health, education and agriculture ".

IIT Madras Industrial Consultancy and Sponsored Research Dean, professor Ravindra Gettu exchanged documents with Misra at an event here . The collaboration seeks to take up research relating to data science for government and e-governance, capacity building in the areas of data science, information and communication technology, among others.

Indian IT companies joining carmakers and start-ups to develop autonomous vehicles

IIT Madras is working with American technology company Intel and German firm Continental, which trialled a driverless car in Frankfurt last year.

" We have worked on building AI based decision making algorithms allow us to adaptively learn controllers for driving. In particular , Our group has explored the question of learning from demonstrations. These are largely laboratory experiments and have not yet been translated into real systems. "

- Prof Ravindran

Research and Publications

Researchers at the Robert Bosch Center for Data Science and Artificial Intelligence and Center for Computational Brain Research, Indian Institute of Technology Madras, and Purdue University have recently developed a new method of reducing computational requirements for object detection in videos using neural networks. Their technique, called Pack and Detect (PaD), was outlined in a paper pre-published on arXiv.

"Fast object detection in videos using region-of-interest packing"

" Nikita Moghe from RBCDSAI obtained the First Prize for best Poster presentation at the #GHCI18 "

14-16 Nov, 2018

Grace Hopper Celebration India is Asia's Largest celebration of women in technology and it was held at Bangalore International Exhibition Centre from November 14-16, 2018. This event was attended by 5000+ women technologists which was indeed an inspiring statistic. Nikita Moghe, M.S the winner said : " I liked the pledge that was taken during the opening session to hello increase women ratio in the field of technology to **50:50 by 2025**. I was provider a full scholarship to attend this event as our poster titled Towards Building code-Mixed Goal Oriented Conversation System (Authors: Suman Banerjee, Nikita Moghe, Siddhartha Arora, Mithesh M.Kapra) was selected to be showcased at the Poster Session in this event.

The scholarship included travel expenses and accommodation at the beautiful Fairfield by Marriot. Needless to say, obtained this scholarship is indeed competitive and the selection criteria includes our academic profile and a personal essay. This three- day event included keynote speeches from Lori Beer, Global Chief Information Officer of J.P. Morgan Vaishali Kasture, Co- founder of Sonder Connect as well as research talks, panel session ,workshop ,tech expo , and a career fair. The postal presentation was scheduled on the second day of the conference. There were around 20 short- listed posters which were base on diverse areas like artificial intelligence, technology in political sciences, high-performance computing, introduction to quantum computing to name a few. The Presenters in the Poster Session included industry professionals, academia, researchers and students. I had a great time interacting with people from various backgrounds, age groups and areas of interests. I believe the challenging part in this particular poster session was to explain in a jargon-free language while retaining the technical novelty of the problem .This was different than the regular academic poster session where the audience typically works in the same broad are and the technical terms are well understood by everyone.

I was also given feedback about out work and directions to implement it at an industrial level. Unaware that there was a poster presentation competition happening in background, I was happily chatting with every attendee at that session and hence, winning the First prize as ' Best Speaker at the Poster Presentation' came as a sweet surprise to me . I was awarded this prize by Jacqueline Copeland -Carson, a seasoned social impact leader and chief Operating Officer of Anita B org, In- addition to that, I particularly enjoyed the speed - mentoring event organized by GHCI. We interacted with three industry leaders for fifteen minutes each. The topics included what qualities contribute to the success of an organizations, dealing with gender biases, and taking career leaps."

Accepted paper @ AAAI 2019

The AAAI Conference on Artificial Intelligence is the world- leading scientific venue on the advancement of AI. It will see its 33rd edition being held on Hawaii, USA, January 2019. AAAI received a record-breaking number of submissions exceeding the 7700 mark, which lead to a historically low acceptance rate of only 16.2%. Graduate student Ananya sai has had a paper accepted to AAAI 2019.

Automatically evaluating the quality of dialogue responses for unstructured domains is a challenging problem. The evaluation metric is crucial to measure the scientific progress is dialogue systems/ conversational agents. Various metrics such as BLEU, METEOR, ROUGE, which are based on n-grams, work overlapping etc have been adopted fir this task of dialogue evaluation With recent research showing that these metrics have low correlation with human scoring and are incapable of handling the diversity of valid responses, neural network based evaluation schemes have been introduced. ADEM(Lower al 2017) is one such model where the automatic evaluation of dialogue systems is formulated as a learning- problem. They showed that such a model was able to predict response which correlate significantly with human judgments, both at utterance and system level. Their system was shown to have beaten word - overlap metrics such as BLEU with large margins. We start with the question of whether an adversary can game the ADEM model. We design a battery of targeted attacks at the neural network based ADEM evaluation system and a show the automatic evaluation of dialogue systems still has a long way to go. We found that ADEM can get confused with a variation as simple as reversing the word order in the text! This paper reports experiments on several such adversarial scenarios that draw out counterintuitive scores on the dialogue responses. We take a systematic look at the scoring function proposed by ADEM and connect it to linear system theory to predict the shortcomings evident in the system. We also devise an attack that can fool such a system to rate a response generation system as favourable. Finally, we alluded to future research directions of using the adversarial attacks to design a truly automated dialogue evaluation system.

"Re-evaluating ADEM: A Deeper Look at Scoring Dialogue Responses, authored by Ananya Sai, Mithunu Das Gupta, Mukundhan Srinivasan, Mitesh M.Khapra"

Campus Connect Session for Certificate Programme in Technology and Management
1st December 2018

"An Online Certificate Programme in Technology and Management jointly offered by IIM Bangalore's IIMBxMOOCs Programme and IIT Madras' CCE and RBC-DSAI"

CTM is a 11 month long programme , offered in four modules. Each module Spans for about three months, comprising technical and management courses. At the end of each module, proctored exam will be conducted . On successful completion of the programme, the candidate receives a Certificate in Technology and Management'.   A Unique learning elements of this programme   is the Opportunity to interact with the course instructors in Person at IITM and IIMB campuses at least once during the run of each module. CTM Campus connect @ IITM Was held on 1st December 2018 in RBCDSAI seminar Hall. Prof Arun and Prof Harish Guruprasad, IIT Madras handled few thoughtful sessions and it was followed by the screening of the movie "Alpha Go ".

"Indian Navy: Incorporation Artificial Intelligence and Machine Learning"

IITM, Chennai

Course on Artificial Intelligence (AI) & Machine Learning (ML)

26th November 2018 – 7th December 2018 , IIT Madras

RBCDSAI is privileged to organize a training course On Artifical Intelligence and Machine learning from 26th November to 7th December 2018 for the selected Officers from the Indian Navy. A group of 30 naval Officers was trained on fundamental topics such as Statics, regression and advance topics such as NLP and computer vision. They also underwent python lab training led by GITAA team.

Prof.B. Ravindran and Prof. Nandan sudarsanam Initiated the session on the introduction and use – Cases , centred around Probabilistic modelling, data visualization, and simulation. This was followed by a series of session from Prof. Rahul Marathe, Prof.Usha Mohan , Prof. Raghunathan Rengaswamy, Dr. Nirav Bhatt, Dr. Harish Guruprasad, Dr, Arun ayyar, Dr. Sudarsan, and Dr. Mitesh Khapra on covering various topics such as Descriptive and Inferential Statistics, Decision Making(FN) ; Simulation (AN),Classification, Regression , Model Evaluation; Feature Selection ,Clustering ,Fore Casting, Natural Language Processing (NLP) and CB/Audio/Signal Processing.

In addition to attending the lecture series, the group also visited the Research Park in IITM, entire training session and workshop helped them to equip themselves in the area of AI & ML.

" Alumni Visit @ RBCDSAI"

27th December 2018

IIT Madras alumni association organized an event called Reunion 2018 a two day celebration attended by IITM alumni from various batches which gave them an opportunity to reconnect with their batch mates, faculty, friends and wonder at the changes in each other. During the day, various events were planned for them which included a tour of the campus.

In his special occasion, ,numerous Alumni from various batches visited RBCDSAI and they interacted with the faculties of RBCDSAI. This interaction enabled them to understand the functions of various research activities Of RBCDSAI. Such visits will enhance teaching and research efforts and help attract outstanding young faculty, students , research scholars and Postdoctoral fellows at RBCDSAI.

Reach Us

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Upcoming Events
❖ 3rd RBCDSAI Workshop
❖ 19th January 2019
❖ Academic research summit on Data Science and AI
   24 th January 2019
❖ RBCDSAI – Web Science Symposium
   25&26th February, 2019

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