Newsletter

Robert Bosch Centre for Data Science and Artificial Intelligence

RBCDSAI, IIT Madras co-organizes Facebook's Symposium on Data for Good Initiative on 24th July 2019

In Partnership with

facebook Data for Good

RBCDSAI,IITM co-organized the Facebook's Symposium on Data for Good Initiative held in ICSR Hall 3, IIT Madras on July 24th 2019. This initiative aims to bring together leading academics, researchers, and development organizations to discuss the evolving role of data in solving social challenges

The initiative provides access to Facebook's cutting edge research and tools to Indian academia, researchers, and NGOs. Facebook believes that when data is shared responsibly with communities in need, it can improve the well - being of those Communities and save lives. The initiative includes tools built from de -identified data from the Facebook platform, as well as tools that are developed using satellite imagery and other publicly available sources. These insights and relevant datasets are available for researchers and non-profits free of cost to further their work.

Welcome Note by Facebook Policy team and Prof. B. Ravindran, Head of RBCDSAI, IIT Madras, case study by Dr. Sridharakumar Narasimhan, RBCDSAI faculty, Professor, Chemical Engineering, IIT Madras followed by a industry case study on how data is being leveraged to address issues in various domains. A keynote address by Alex Pompe (Research Manager, Facebook) where he demonstrated how Facebook's data products have helped solve real - world problems leading to social and economic growth.

Fifth RBCDSAI Workshop on Recent Progress in Data Science and AI

The Robert Bosch Centre for Data Science and Artificial Intelligence organized a 4th workshop on Recent Progress in Data Science and AI . The highlight of the event was the talk by Prof. Raghunathan Rengasamy regarding "Digital Twin for Industrial Process". This was followed by a series of presentation from Researchers at RBCDSAI, Ashley Xavier's, "Predicting Gestational Diabetes from GARBHIni data Challenges",

Mr. Sudhakar Kathari's "Data Driven Causality Analysis and Graphical Modeling of Multi -ariable Processes", Ms. Preksha Nema's "Let's Ask Again- Refine Network for Automatic Question Generation " and "Leak Detection in Intermittently Operated Water Distribution Networks " by Prasanna M . The seasons were interactive and helped delegates further their knowledge in Artificial Intelligence and Machine Learning.

Indian Process Systems Engineering Conference 2019

The first Indian Process Systems Engineering Conference (IPSE 2019), IIT Madras, Chennai, India on 18-19th August 2019 was co-organized by Robert Bosch Centre for Data Science and Artificial Intelligence, IIT Madras. The theme of the conference is "PSE and Re -imagining PSE in the era of big data science and IoT". The IPSE was a one and half day event with six plenary lectures, twenty invited research talks, and a poster presentation session.

IPSE hope to develop a larger society to tackle PSE problems of interest, collaboratively. It is our fond wish that industry participate enthusiastically in this initiative.

Further, IPSE plan to continue this conference series once every two years at different locations in India. The IPSE was intellectually stimulating and productive conference.

"IIT Madras- Robert Bosch Centre for Data Science and Artificial Intelligence looks to help Manufacturing, Automotive Sector adopt Artificial Intelligence in a big way!"

The Second RBCDSAI AI/ML Conclave on Manufacturing and Automotive Applications jointly organized at IIT Madras 29th Aug 2019 by RBCDSAI and Latent View Analytics

CHENNAI, 29th August 2019: Indian Institute of Technology Madras Robert Bosch Centre for Data Science and Artificial Intelligence (RBC DSAI), one of the premier AI Research Groups in the country, is looking to help Manufacturing and Automotive Sector to increase AI adoption in the industry.

Towards this, the Second RBCDSAI AI/ML Conclave on Manufacturing and Automotive Applications was organized at IIT Madras today (29th Aug 2019) jointly by RBCDSAI and Latent View Analytics. AI and Data Science have been a key driver in enabling growth across industries with the automotive industry being no exception. When it comes to this sector, the proliferation of AI and data science spans across the entire automotive business spectrum ranging from manufacturing to the after market.

Setting the context for the Conclave, Prof Raghunathan Rengaswamy, Institute Chair Professor, Department of Chemical Engineering, and Core member RBCDSAI, IIT Madras, said, "This Conclave will revolve around themes such as AI in Manufacturing, AI in Automotive Product Design and AI-driven Automotive services in manufacturing and operations. The event has been designed to help industry know what AI can bring to the table."

This conclave explored how AI can be a key enabler across business practices in the automotive and manufacturing industry such as product development, automotive services and manufacturing, to name a few. The event included deep-dive sessions on the challenges in ensuring a strong skill pipeline is built in collaboration with academia and industry.

Delivering the Welcome address, Prof. B. Ravindran, Head of RBC DSAI, IIT Madras, and Professor, Department of Computer Science and Engineering, IIT Madras, said,

"Reliability is one of the issues in Manufacturing that AI can look into. The kind of demands on AI in manufacturing are very different compared to other fields. We need people in the AI field to understand the requirements of the industry and the industry needs to know what the AI people can bring to the table. This is what this Conclave sets out to achieve."

Further, Prof Ravindran added, "One of the key mandates of RBC DSAI is to encourage wider adoption of AI and AI enabled services. In this conclave we are reaching out the manufacturing and automotive sectors to enable a better understanding of application of AI in these sectors. The RBC DSAI organizes an event every month to reach out to people and enrich the AI ecosystem. We urge researchers, faculty and industry in the event to connect with each other and explore potential collaborations."

Highlighting the importance and outcomes of this Conclave, Prof. Ravindran said, "Events like this conclave that bring together people from a cross-section of stakeholders are crucial to the evolution of AI in a direction that benefits the society at large. Institutions like IIT Madras have to take a lead role in organizing such conclave."

Addressing the inauguration session, Mr. Venkat Viswanathan, Founder and Chairman, Latent View Analytics, said, "Manufacturing has been the bedrock around which a lot of new technologies have been invented since 1950. Multiple inventions have come from manufacturing sector. It is only now that the opportunity has arisen to store a lot of data generated by manufacturing sector. We can store the data even if we do not have immediate use for it and this could be a key differentiator in the future."

The following sessions were conducted :

Session 1: AI in Manufacturing.

Session 2: Panel Discussion on Skilling and Re-Skilling

Session 3: AI in Automotive Product Development.

Session 4: AI driven Automotive Services.

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Around 20 speakers delivered lectures during the conclave, which attracted more than 250 participants, with 80 % from industry and the rest from the academic and student community.

Social Events in RBCDSAI

Social events organized at RBCDSAI every fortnight for a vibrant environment at RBCDSAI and improve interaction among RBCDSAI and IBSE members.

- ❑ ***July 04, 2019*** : A talk by Prof. B. Ravindran, Prof. Himanshu Sinha and Mr. Sridhar about the various projects signed by RBCDSAI, followed by informal events and games.

- ❑ ***July 18, 2019*** : A fun talk by Mr. Sameer Mehta based on gaming!.

- ❑ ***August 08, 2019*** : Three minute research talk by students followed by a fun-filled special version of BINGO!.

- ❑ ***August 22, 2019*** : Group discussion on popular science topics like Gene editing and Self -driving cars etc.

- ❑ ***September 05, 2019*** : Talk by Prof. Raghunathan Rengaswamy titled "A needle in a haystack : Control loop diagnosis".

- ❑ ***September 19, 2019*** : Talk by Jayadev on Mathematics of Rhythm followed by a short mridangam performance.

Talks Given by RBCDSAI Faculty

By Prof. Ravindran

1. Moderated a panel discussion on "Skilling and Re skilling for AI/ML for Manufacturing", Second RBCDSAI AI/ML Industrial Conclave, IIT Madras, August 29, 2019.

2. "Why Reinforcement Learning?", Keynote Talk, IITMAA -Sangam Hackathon, IIT Madras, August 24, 2019.

3. "Why the Recent Excitement in AI? [How Human is AI?]", Second Bangalore on IT Seminar, IIIT Bangalore, August 21, 2019.

4. "Introduction to Reinforcement Learning", Keynote Talk, First Indian Process Systems Engineering Conference (IPSE), IIT Madras, August 19, 2019.

5. "Beyond Rewards", Keynote Talk, Workshop on Scaling up RL (SURL), International Joint Conference on AI, Macao, China, August 12, 2019.

6. "AI and Data Science Landscape in India", Invited Talk, KDD in India event, ACM SIGKDD Conference, Anchorage, Alaska, August 7, 2019.
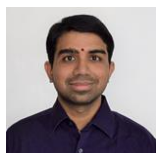
7. "Why RL?", Keynote Talk, KDD Cup Day, ACM SIGKDD Conference, Anchorage, Alaska, August 6, 2019.

8. "Reinforcement Learning at Work", Invited Talk, Montreal Institute of Learning Algorithms (Mila), Montreal, Canada, July 12, 2019.

9. "Reinforcement Learning at Work", Invited Talk, Google Brain/ DeepMind, Montreal, Canada, July 11, 2019.

By Prof. Raghunathan Rengaswamy

10. Talk and panel discussion on " AI in Manufacturing", Second RBCDSAI AI/ML Industrial Conclave, IIT Madras, August 29, 2019.

By Prof. Karthik Raman

11. "Unraveling Microbial Interactions In The Gut Microbiome As sociated With Antibiotic Recovery", Talk at International Centre for Theoretical Studies (ICTS) Discussion Meeting on "Mathematical and statistical explorations in disease modeling and public health" July 5, 2019.

By Dr. Nandan Sudarsanam

12. Moderated a panel discussion on " AI driven Automotive Services", Second RBCDSAI AI/ML Industrial Conclave, IIT Madras, August 29, 2019.

Visitors:

From July to September 2019, RBCDSAI hosted 70+ visitors from 30 + Organizations which include YTCA America INC, Fraunhofer, Art works, DTU Management Engineering, University of HOUSTON, TOYOTA, High Commission of the Republic of Singapore, MTI (Ministry of Trade and Industry), VERISK, Renault Nissan Technology & Business centre Ind Pvt ltd, Nissan Motor Corp, DRDO, Legato, ACMA, Hindustan times, Acurus, Department of Public Enterprises, Chennai Petroleum Corp Ltd, Bharat Electronics Ltd, University of Moratuwa, College of Engineering, Guindy.

September 2019, Hosted Sarath Chandar, final year Ph.D. candidate at Mila, University of Montreal, working with Yoshua Bengio and Hugo Larochelle. He is starting as an Assistant Professor at Polytechnique Montreal and Mila from Fall 2019. Sarath is a recipient of the IBM Ph.D. Fellowship 2018-2020 and FQRNT PBEEE scholarship 2016-2018.

CTM Campus Connect :

The Campus Connect Session of Course on Certificate in Technology and Management (run by IIMB and RBCDSAI,IITM), conducted on 24th August 2019. Prof. Ravindran, Prof. Nandan Sudarsanam and Prof. G Venkatesh (Co -founder, Sasken Technologies Ltd.) delivered lectures. About 22 students of CTM Batch 2 attended this Campus Connect Session.

Upcoming Events

❖ **Sixth RBCDSAI Workshop on Recent Progress in Data Science and AI on November 27th**

❖ **Workshop on Smart Mobility (Data-driven Models and Algorithms) December 15th**

❖ **First RBCDSAI Latent view Colloquium on December 19**