DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

MESSAGE FROM THE PRINCIPAL

It gives me great pleasure to give my best wishes to the editorial committee of the Department of Artificial Intelligence and Machine Learning, New Horizon College of Engineering. The students and faculty of the department are always proactive in taking initiative in all kinds of events. I congratulate all the achievers, contributors and students for bringing out such an informative newsletter. I hope this newsletter reflects all activities of the department and inspires others to do their best.

Thanking you,

Regards

Dr. Manjunatha

MESSAGE FROM THE HOD

Greetings!!

"Don't be pushed around by the fears in your mind. Be led by the dreams in your heart." -Roy T. Bennett.

Once you encounter your fears , you will discover you no longer have them. Striving for one's dreams is the most enriching process of any individual's personality.

I take pride in the achievements of the students of AI&ML Department. Hearty congratulations to all of them. Active participation in activities is the best value, that can be put through learning and progressing in all walks of life. I appreciate all of them who have taken efforts to inculcate and learn.

Excellent team work exhibited by the team of AI&ML Department. I thank all the members for being pillars of support and taking part in day to day activities.

Thanking you,

Regards

Dr. Uma Reddy NV

ABOUT THE DEPARTMENT

The Department of Artificial Intelligence and Machine Learning at New Horizon College of Engineering was established circa 2020, and it offers a program at the UG level. The institution in all its grandeur is accredited by National Board of Accreditation (NBA) and by The National Assessment and Accreditation Council (NAAC) with the coveted "A" grade.

Artificial Intelligence is consistently clawing itself deeper into various industries, and clearly possesses great potential in the current market. It would be best described as an amalgamation of Data Science and Machine Learning. For the average Joe, Data is an elephantine amount of information with great scope for elaborate analytics.

Data Science encompasses investigation, interpretation and the conversions required to make the most of data. AI, stripped bare to it's bones, is essentially the attainment of human cognitive behaviour, by the meshing in of Data Science and Machine Learning in a cohesive approach.

The department of AI&ML here at NHCE quintessentially focuses on the five pillars of AI technology- Data Science, Machine Learning, Deep Learning, Big Data Analytics and Visualization & Deployment of the predictive model. The calibre of any department is intrinsically defined by the professors it nourishes. Our department boasts a competent fraternity of ardent, motivated and experienced professors striving to equip their students with the skills to provide smarter solutions to the problems, existing and forthcoming. Paving the way for a brighter future, in the modern world.

VISION AND MISSION

Vision:

To emerge as a department of eminence in Artificial Intelligence and Machine Learning in serving the Information Technology Industry and the nation by empowering students with a high degree of technical and practical competence.

Mission:

- To strengthen the theoretical and practical aspects of the learning process by strongly encouraging a culture of research, innovation and hands-on learning in Artificial Intelligence and Machine Learning
- To encourage long-term interaction between the department and the IT industry, through the involvement of the IT industry in the design of the curriculum and its hands-on implementation.
- To widen the awareness of students in professional, ethical, social and environmental dimensions by encouraging their participation in co-curricular and extracurricular activities.

ORIENTATION

4 October 2021

The orientation program was conducted by the faculty of the newly established AI&ML branch at New Horizon College of Engineering. The session was conducted to facilitate the students with the necessary awareness of the current market trends and the inclinations of industries associated with AI&ML.

The HOD, Dr. N. V. Uma Reddy welcomed the students into the new academic year. After which she prudently enlightened the crowd on the Vision and Mission of the department. The course syllabus, outcomes and schema were also briefly glossed over.

Prof. Dinesh engaged the congregation with humorous brain teasers ultimately leading both, the students and the professors alike, to rack their brains. Following which, Dr. Suresh delivered a talk that aimed to demystify some of the common misconceptions, assumptions and myths of the domain of AI&ML. Prof. Bhargava conducted an activity to engage the students and made the session feel more interactive and interesting. Post lunch, Prof. Kavyashree illuminated the attendees with the applications of AI in the various walks of life. Prof. Sowmya then proceeded with a meticulous quiz.

The session was concluded with interactive ice breakers enabling the students to acquaint themselves with their peers in a fun and engaging way.

BRAINIACS CLUB

Creating a Culture of Innovation

Signaling the beginning of yet many other clubs, the inauguration ceremony of the "brAInIAcs" club began with the lamp lighting in the presence of Dr.Manjunatha B (Principal), Dr.Amarjeet Singh (Dean Academics), Dr. Anitha Rai (Dean-Library), Dr. N V Uma Reddy, (HoD- Dept. of AIML), faculty members and students. This was followed by the revelation of the club logo and the oath taking ceremony by the members of the club. The principal addressed the gathering and explained the importance of technical clubs, and emphasized on this one being the first of its sorts in the department and how it would go on setting milestones.

Mr. Ashish Sridhar, working as an AI developer at Bosch Germany, delivered a talk on "The Industrial Exposure in AI & ML" to provide the department with the much appreciated insight on the world of Artificial Intelligence and Machine Learning. Thereby, widening our horizon and enlightening us on the new world.

ABOUT THE CLUB

Brainiacs is the first Artificial Intelligence and Machine Learning club of NHCE. It aims to be a gathering place for students who are enthusiastic about learning, discussing and applying AI/ML to all kinds of problem-solving, be it academic or real-life.

The vision of the club is to provide content, guidance and practical experience to horizonites by building a community of like-minded individuals and facilitating meaningful involvement, community engagement and leadership development, which enable all students to contribute to a global society.

The mission of the club is to provide a platform for students to discover and engage their strengths, talents, and passions. It aspires to bring the campus to life through fun and diverse opportunities outside the classroom.

Designed by Daksha T M

BRANIACS CLUB EVENT-1

VAS-CODEA-GAME

The event "Vas-CodeA-Game" was conducted on 9-12-2021 and 10-12-2021. It was a technical event which consisted of four rounds.

Round 1: A fun online quiz called Quizpicable-Me, where all the questions were in pictorial format. Participants had to join 'quizizz' and attend through a zoom meeting.

Round 2: An offline debate titled, 'Battle-between-Brains'. The participants were divided into groups of 4 based on the number on the chit they picked. Each group was given a unique mind-bending topic/problem which holds prevalence in modern society.

Round 3: 'Peel-the-Code' was a round of debugging. Participants were allowed to choose a programming language of their choice and were given 15 lines of bug-ridden code in their respective languages.

Round 4: The final game was 'Code Crushers' wherein the finalists were given a pattern to print using participant's preferred programming language .

The event ended on a good note owing to the vigor and enthusiasm shown by the event managers as well as the participants.

WORKSHOPS

Johann Wolfgang Von Goethe, a German poet, once said," In the end we retain from our studies only that which we practically apply.". Learning would have no lasting impact unless it's been applied. Workshops are one of the plethora of ways to imbibe long lasting knowledge which, in all fairness is relevant to the times, and hence facilitating everyone involved with a useful and fun-filled experience when compared to its triter counterparts.

PC HARDWARE AND TROUBLE SHOOTING

The workshop was a two - day undertaking conducted on 29th and 30th October. The aim was to impart the basics of PC hardware, PC architecture and organisation, common troubleshooting protocols as well as engender an awareness vis-a-vis Computer Network concepts and configuration. These skills are instrumental to maintaining and building servers. Following an insightful discourse by the HOD, Dr. Suresh expounded on the inner machinations of a modern pc. He then proceeded to assemble and link several computer parts with care, as cursory assembly could potentially cause irreparable damage to the components, he informed . After successfully assembling a functional unit , he enjoined the class to try it out for themselves on several repurposed disassembled PCs.

The second day of the workshop handled by Prof. Dinesh and Prof. Bhargava focused on the concepts of networks along with network configuration. The workshop also featured a hands-on session with LAN crimping. The professors' perused the handiwork of the students and rectified their errors.
In the afternoon session Mr. Melvin elucidated troubleshooting principles for networks like DHCP IP intuitively using flowcharts. Several configuration issues were addressed and solved by simple Linux commands.

The workshop succeeded in enriching technical acumen of the students and they were able to maintain their PCs competently. Equipped with newfound networking and troubleshooting knowledge, the attendees were now able to ensure a singular PC or server runs harmoniously.

ALTAIR
WORKSHOP

Workshops, much like portals, provide us with a glimpse of what's happening in the real world enabling classical universities to stay on par with the times.

Mr. Subhojyoti, Altair Engineering, out of his own altruism, provided the faculty here at NHCE with a riveting workshop titled "Altair tool usage" on the 11th of November, 2021.

The session in all its glory, started with a brief about Altair University and all the courses it offers. The workshop being interactive, provided the attendees with an immersive experience.

The matter of the moment was most certainly Altair Monarch, a self-service data preparation solution which enables businesses to extract data from documents and Big Data alike. Data preparation by Monarch, and how it builds time-effective data analytics models was discussed. The attendees were provided with an opportunity to work with the Altair tools, which was the cherry on top.
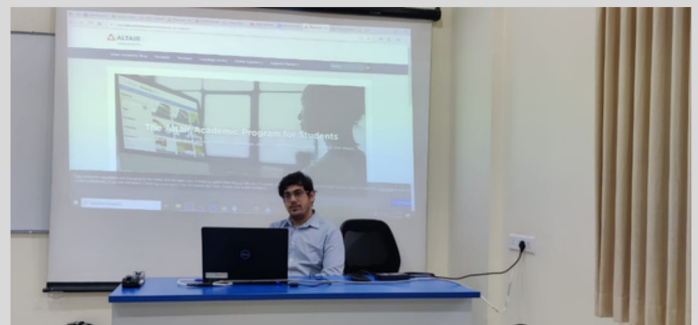
PROBLEM SOLVING WORKSHOP

The event was hosted, on 13th November, by Prof. Bhargava who is proficient at solving industry tier problems. He filtered out the technical jargon initially and explained rudimentary problems intuitively. The event commenced after an address by the HOD of AI&ML, Dr. N V Uma Reddy regarding the importance of problem solving and it's implications for placement selections. The problem-solving workshop sought to familiarize the students with a multitude of problems faced by programmers on the daily.

After all the basics were covered an assortment of placement drive questions including both, technical and logical were assigned to the students resulting in a host of possibly viable solutions. The fastest codes being merely milliseconds faster than the rest; nevertheless milliseconds are equivalent to eons in the tech world and therein lies the key to efficient problem solving in programming, as explained by Prof. Bhargava.

The post-lunch session focused on solving and deriving mathematical problems.

The program was concluded by sharing various tips and few problems for further practice. Considering the novelty of Artificial intelligence, the workshop proved to be indispensable for the technically unaccustomed and helped them enhance their technical acumen.

WORKSHOP ON MATHEMATICS BEHIND MACHINE LEARNING

The department of Artificial Intelligence and Machine Learning organized a one day workshop on Mathematics behind machine learning on 27th November 2021.

The workshop conducted was aimed at increasing clarity and educating students about the paradigm of mathematics in machine learning and data science algorithms. The workshop commenced after an address by Dr Uma Reddy, HOD- Department of AI & ML emphasizing on its importance.

It was hosted by Dr.A.Suresh who is a proficient with Machine Learning algorithms. The workshop aimed at increasing clarity and understanding of the algorithm amongst the students.
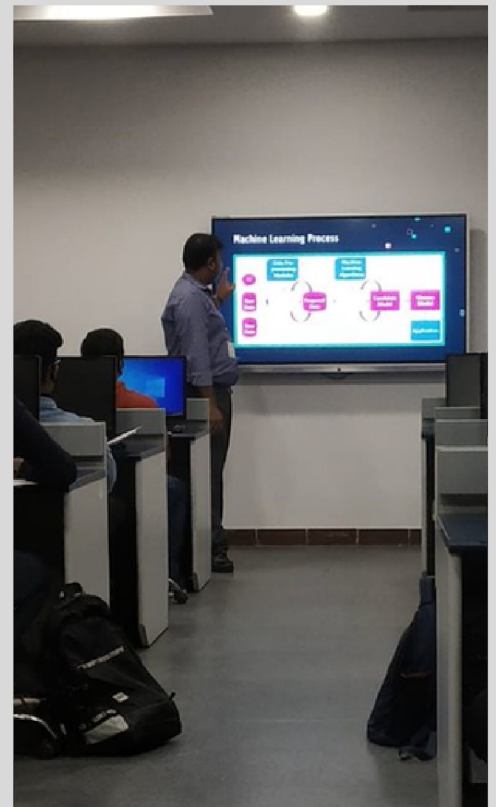
AZURE-CLOUD FUNDAMENTALS

You haven't the foggiest idea what you mist

Signaling the beginning of yet many other tech workshops, the Microsoft Azure workshop kicked off, on 11 December, after a pep talk from the HOD. The workshop aimed to hone the skills of freshmen of the Artificial Intelligence department.

This event officially began with a group activity in which the students were asked to decide the resources necessary to set up an IT start up which set the room abuzz with lively discussions. The most compelling answers asserted that the need for cloud storage and computing was a pre-requisite for success.

The event then progressed to problems faced by startups regarding cloud computing, for instance: which cloud out of the three types to choose from?
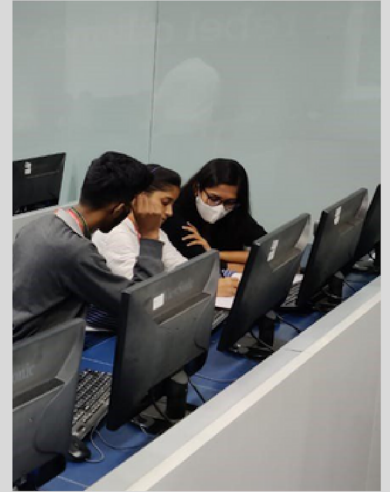
After a riveting morning session, the afternoon session informed the students about Azure architecture and it's current position as the most coveted cloud software owing to it's several advantages over it's competition. The students were taught the procedure for account creation, deployment of VM service and other services. The event concluded with the students creating their own bespoke services in Microsoft Azure.

PUBLICATIONS

Learning - in the words of our principal - and many before him, is a never ending process. The faculty here at the department of AI&ML strive to give their best not only while imparting knowledge but also in their individual technical careers by contributing to the advancement of the industry in a worthwhile and notable manner. Their reputed work has been featured in many publications and a few have been highlighted below.

Research publications (Journal)

- *Energy Efficient Low Latency Routing Design for Target Tracking Applications of Wireless Sensor Network. Journal* :Requirements Engineering in Volume 26, Issue 4
  - Deepika Lokesh and Dr. N.V. Uma Reddy

- *Semantic Based Weighted Web Session Clustering Using Adapted k-Means and Hierarchical Agglomerative Algorithms.* Journal of Web Engineering. Vol.21 Issue :2 239-264
  - H.K.Sowmya and R. J. Anandhi

Research publications (Conference)

- *Deep Learning based System Design for Diabetes Prediction,* 2021 International Conference on Smart Generation Computing, Communication and Networking (SMART GENCON)
  - R. Bhargava and J. Dinesh

- *A Survey on the Cervical Cancer Detection using Deep Learning methods,* 2021 International Conference on Forensics, Analytics, Big Data, Security (FABS)
  - C Kavyashree, H K Sowmya, Dr. N V Uma Reddy

- *Automating the detection of cervical cancer: A Review* , North East Green Summit
  - C Kavyashree, H K Sowmya, Dr. N V Uma Reddy

Research publications (Book)

- *A Square-Slotted Dual-Bandwidth Rectangular-Patterned Antenna for IoT Applications*
  - Dr. N.V. Uma Reddy

Patents

- *A Deep Learning Based Framework for Monitoring the Soul Moisture from the Portable Device*
  - Dr. N.V. Uma Reddy
- *Performance Improved Heat Pipe for Cold Interface*
  - Dr. N.V. Uma Reddy
- *Sensor Based Intelligent Brain Computer Interface System for Assisting Hand Paralyzed Patients to Operate Robotic Arm*
  - Dr. Sreejit Panicker

THE FACULTY

Dr. Uma Reddy N V
Spearheading the department, she is determined and on the path to accomplish the goals she has in mind. Having received her Ph.D in the VLSI domain, she has stepped in as the Head of the AIML Department. With a repertoire of over 25 years of teaching experience, she leads the faculty by example.

Dr. Sreejit Panicker
After receiving his Ph.D in Computer Science Engineering, he has devoted himself to the teaching realm with an experience of 21 years. He carries his tenacity everywhere he goes inspiring students with his teachings.

Prof. Sowmya H K
A vibrant force in the department, who is just as meticulous as she is jovial. She is currently pursuing a Ph.D. in Web Mining and has a prior teaching experience of 15 years.

Prof. Kavyashree C
With her spirited presence in the department, she has been pivotal in coordinating with the students in their academics and their co-curricular activities. She is currently pursuing a Ph.D. in the area of Deep Learning and has a teaching experience of 12 years.

Prof. Bhargava R
He has frequently showcased his exceedingly abundant analytical prowess to conduct various technical workshops in our department. He is currently pursuing a Ph.D. in the area of Machine Learning and has a teaching experience of over 7 years.

Prof. Shruthi S
Despite being a nascent presence in our department, she has been a valuable asset, with her diligence and perseverance. She has a teaching experience of over 8 years.

STUDENT ACHIEVEMENTS

Kavya Sivakumar (1NH20AI047)
Second Runner up in Dance vs Dance
Season 2

Roshan Syed (1NH20AI105)
Runner up in State Championship - Judo

Idea Hackathon
To test the business acumen of students, ED Cell at NHCE conducted an event called "Idea Hackathon" where the top ten teams were awarded with seed money of Rs.10,000/-. The teams from the department of AI & ML which secured spots in the upper echelon are:
1st place- Jayavibhav N K (1NH20AI035), K Manish(1NH20AI038), Prasanna Kotyal (1NH20AI079)
3rd place- Neha Darawan (1NH20AI127)
6th place- Yash Tyagi (1NH20AI121)
9th place- Rohan S Siddeshwara (1NH20AI089), Nischith L (1NH20AI071), Sumukha Bharadwaj (1NH20AI102) , Jiya Ann Elias (1NH20AI037)

Shambhavi Dwivedi (1NH20EE099) secured fourth place in the Inter-Zone Basketball Tournament organized by BMSCE from 17/12/21 to 18/12/21.

JayaVibhav N K (1NH20AI035), secured 1st place in Technophilia, an inter-departmental event organized by the CSE department on 19/11/21

EDITORIAL COMMITTEE

Chris Vinson K
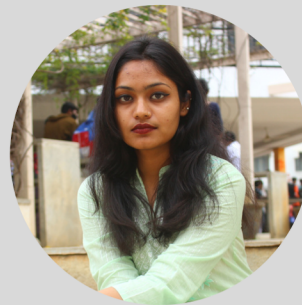
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