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INSIDEAI

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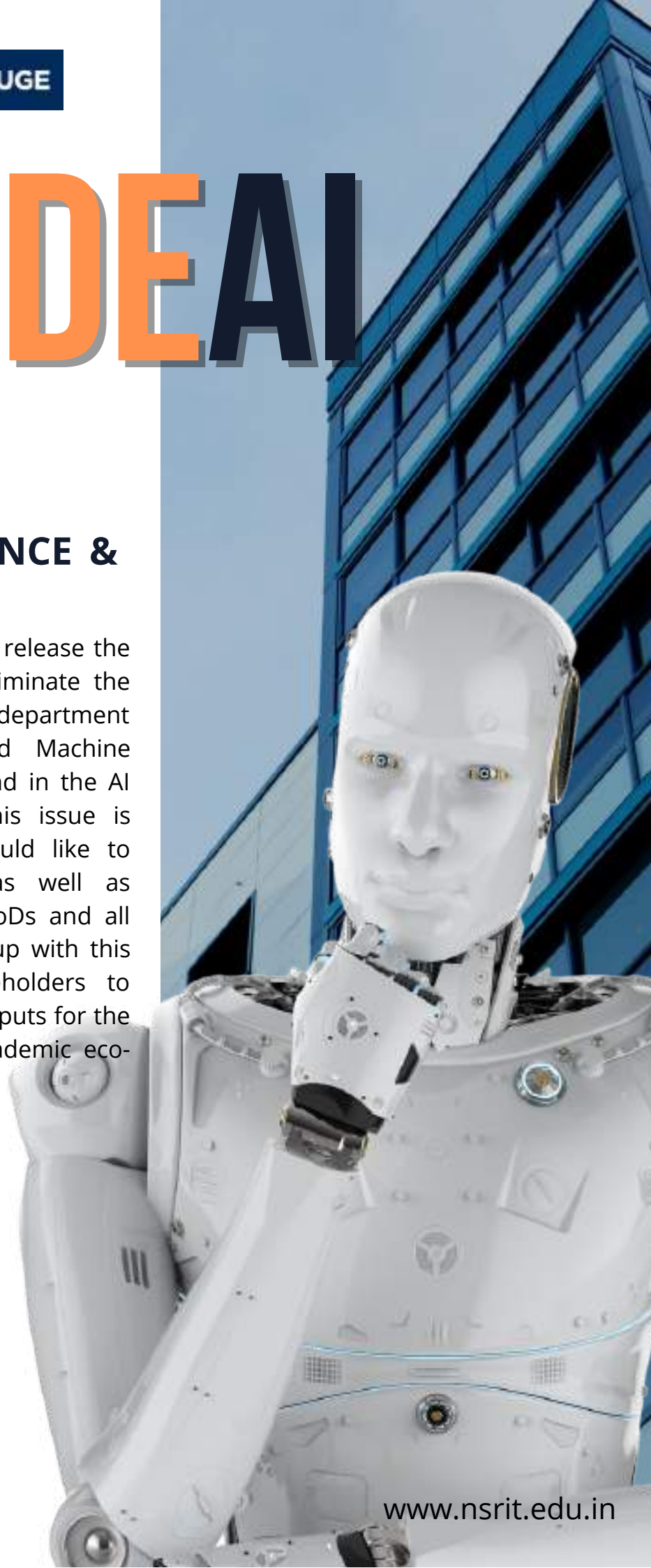
DEPARTMENT OF
ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

The program is AI & ML is happy to release the first magazine "**INSIDEAI**" to dessiminate the activities that are happening in the department of CSE (Artificial Intelligence and Machine Learning) as well as the recent trend in the AI industry to the outside world. This issue is quarterly and the department would like to appreciate the editorial board as well as Management, Director, Principal, HoDs and all the internal stakeholders to come up with this first issue. We expect the stakeholders to support us by providing necessary inputs for the continuous improvement in the academic eco-system.

Best Wishes !

Dr. R. Priya Vaijayanthi

HoD (CSE - AL & ML) & Chief Editor



Editorial Board

FEATURES

Our ultimate objective is male program that learn from experience effectively as humans do. We shall.. say that a program has a common sense if?

- John McCathy, Father of AI

Highlights

- The department of CSE (AL & ML) has signed an MoU with HMI Engineering Services, Visakhapatnam on August 10, 2022 with a scope of nurturing new age talents among the stakeholders
- The department is offering a one-credit course on all weekends taking the support of SMEs of HMI Engineering Services, Visakhapatnam during this pursuing semester of the academic year 2022 - 2023 in Machine Learning for the students of Second and Third Year
- Organised the induction program for the students of second years inviting industry expoerts on to the campus on August 26, 2022. Mr. Venu Gopal, CROWE, LLP, USA addressed the students

Exchanging MoU with HMI

- Organised a two-day workshop on NVIDIA - Deep Learning from July 17 - 18, 2022 for the members of faculty and students of CSE and CSE (AL& ML) and CSE (DS)

Second Year Induction Program

2-day workshop by NVIDIA

Stakeholders Technical Articles from Web Resources

TINYBERT: DISTILLING BERT FOR NATURAL LANGUAGE UNDERSTANDING

Language model pre-training, such as BERT, has significantly improved the performances of many natural language processing tasks. However, pre-trained language models are usually computationally expensive, so it is difficult to efficiently execute them on resource restricted devices. To accelerate inference and reduce model size while maintaining accuracy, they first proposed a novel Transformer distillation method that is specially designed for knowledge distillation (KD) of the Transformer-based models. By leveraging this new KD method, the plenty of knowledge encoded in a large “teacher” BERT can be effectively transferred to a small “student” TinyBERT. Then, they introduced a new two-stage learning framework for TinyBERT, which performs Transformer distillation at both the pretraining and task-specific learning stages. This framework ensures that TinyBERT can capture the general-domain as well as the task-specific knowledge in BERT.

TinyBERT with 4 layers is empirically effective and achieves more than 96.8% the performance of its teacher BERTBASE on GLUE benchmark, while being 7.5x smaller and 9.4x faster on inference. TinyBERT4 is also significantly better than 4-layer state-of-the-art baselines on BERT distillation, with only ~28% parameters and ~31% inference time of them. Moreover, TinyBERT6 with 6 layers performs on-par with its teacher BERTBASE

Source:- https://arxiv.org

My Interest

Mr. Arvind
III CSE (AI & ML)

MACHINE LEARNING ALGORITHMS

My Interest

Mr. Sanjay Babu
III CSE (AI & ML)

Machine learning (ML) is the scientific study of algorithms and statistical models that computer systems use to perform a specific task without being explicitly programmed. Learning algorithms in many applications that’s we make use of daily. Every time a web search engine like Google is used to search the internet, one of the reasons that work so well is because a learning algorithm that has learned how to rank web pages. These algorithms are used for various purposes like data mining, image processing, predictive analytics, etc. to name a few. The main advantage of using machine learning is that, once an algorithm learns what to do with data, it can do its work automatically. In this paper, a brief review and future prospect of the vast applications of machine learning algorithms has been made.

Since their evolution, humans have been using many types of tools to accomplish various tasks in a simpler way. The creativity of the human brain led to the invention of different machines.

These machines made the human life easy by enabling people to meet various life needs, including travelling, industries, and computing. And Machine learning is the one among them. Machine learning (ML) is used to teach machines how to handle the data more efficiently. Sometimes after viewing the data, we cannot interpret the extract information from the data. In that case, we apply machine learning. With the abundance of datasets available, the demand for machine learning is in rise. Many industries apply machine learning to extract relevant data. The purpose of machine learning is to learn from the data. Many studies have been done on how to make machines learn by themselves without being explicitly programmed. Many mathematicians and programmers apply several approaches to find the solution of this problem which are having huge data sets

List of machine learning Algorithms

- Supervised learning
- Unsupervised learning
- Semi- Supervised learning
- Reinforcement learning
- Ensemble learning

Source : Batta Mahesh (Independent Researcher)

RECURRENT NEURAL NETWORKS (RNN'S)

Now that we've learned a little bit about how we can encode text it's time to dive into recurrent neural networks. Up until this point we have been using something called feed-forward neural networks. This simply means that all our data is fed forwards (all at once) from left to right through the network. This was fine for the problems we considered before but won't work very well for processing text. After all, even we (humans) don't process text all at once. We read word by word from left to right and keep track of the current meaning of the sentence so we can understand the meaning of the next word. Well this is exaclty what a recurrent neural network is designed to do. When we say recurrent neural network all we really mean is a network that contains a loop. A RNN will process one word at a time while maintaining an internal memory of what it's already seen. This will allow it to treat words differently based on their order in a sentence and to slowly build an understanding of the entire input, one word at a time.

This is why we are treating our text data as a sequence! So that we can pass one word at a time to the RNN.

Source: https://colah.github.io/posts/2015-08-Understanding-LSTMs/

My Interest

Mr. Deepak
III CSE (AI & ML)

My Interest

Ms. Tejaswini
III CSE (AI & ML)

ROBOTICS

It is impossible to imagine modern industry without the intelligent networking of production and value chains with information and communication technology. In a sector where efficiency is a top priority digital processes are opening up new opportunities. Artificial Intelligence (AI) and Big Data make it possible to automat production process -all the way to the smart factory. Actually what is this robotics let us deep into it?

WHAT IS ROBOTICS?

Robotics is the branch of engineering and computer science where machines are built to perform program task without further human intervention.

Why is Robotics?

•projects using AI in robotics are in the minority but such designs are likely to become more common in further as our systems become more sophisticated.

Are Robotics and AI same?

In robotics we are robots are built and program to perform various specific duties. In ai were systems emulator human mind to learn solve problems and make decisions on the fly without needing the instruction specially programmed

Source: Alan martin, freelancer reporter (11/26/2021)

Eminent Researchers of AI

Dr. Andrew Ng
Coursera

Dr. Geoffery Hinton
Father of DL

Dr. Tom Michelle
Father of ML

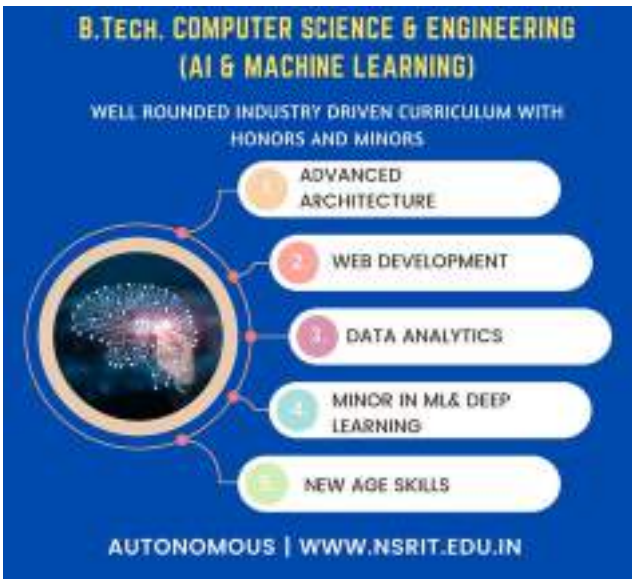
STUDENTS' AUTONOMOUS LEARNING

- Ms. Vinisha, III CSE (AL & ML), Cloud Computing
- Mr. G. Dilip, III CSE (AL & ML), Python, Machine Learning and NLP
- Ms. Likitha, III CSE (AI & ML), Introduction to Java
- Mr. Sanjay, III CSE (AI & ML), Introduction to Artificial Intelligence
- Mr. Rakesh, III CSE (AI & ML), Introduction to Artificial Intelligence
- Mr. Deepak, III CSE (AI & ML), Machine Learning
- Mr. Ratna Kumari, III CSE (AI & ML), Python for Beginners

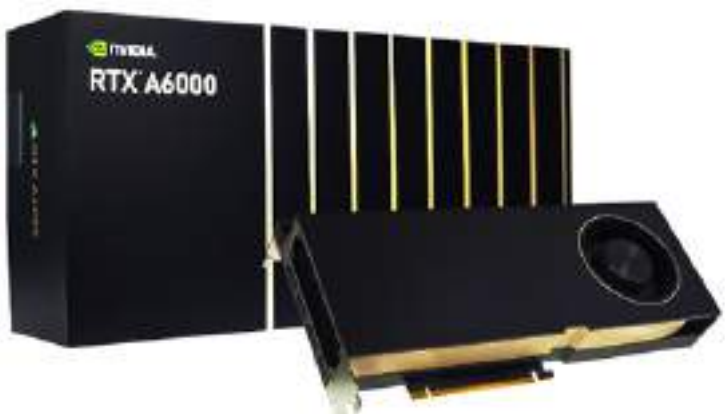
FACULTY AUTONOMOUS LEARNING

- Dr. R. Priya Vaijayanthi, Professor, NLP and Text Mining; Python for Beginers

INDUSTRY ENGAGEMENT (ONE CREDIT COURSE) - PHOTO GALLERY



HI PERFORMANCE COMPUTING FACILITY IN THE DEPARTMENT



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