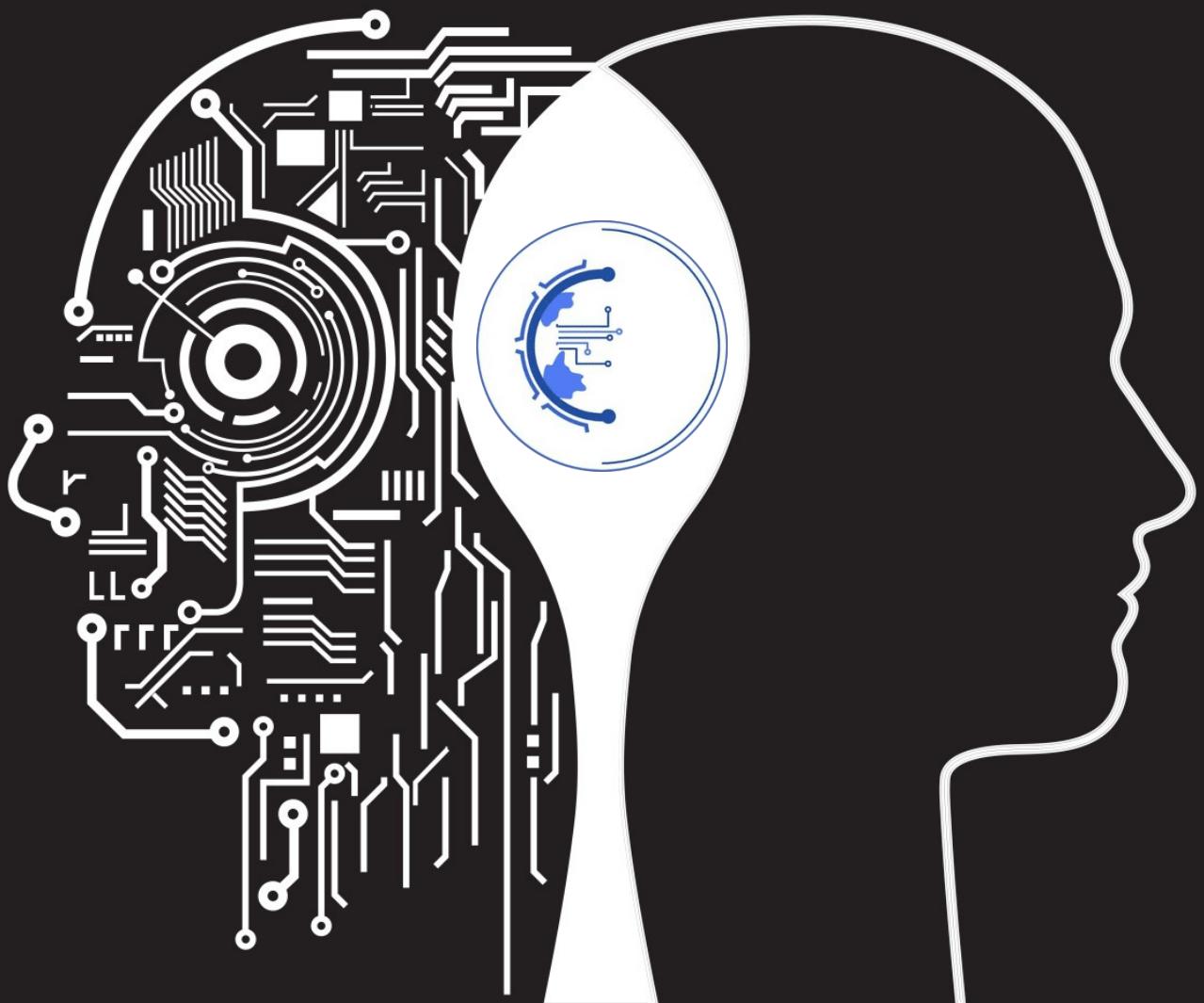




# CIRCADIAN

ODD SEMESTER ISSUE 1



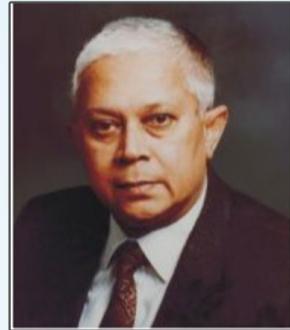
THE OFFICIAL MAGAZINE OF  
THE DEPARTMENT OF  
ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

# Our Founders



**Shri B. M. Sreenivasaiah**

Founder, BMS Institutions



**Shri B. S. Narayan**

Founder & Donor Trustee

The history of BMS institutions rewinds back to the year 1946 with the establishment of the first private engineering college in the country, BMS College of Engineering (BMSCE), by late Sri B.M Sreenivasaiah. He was a philanthropist and a great visionary who realised the necessity of technical education even before the country got independence. He was honoured by the Maharaja of Mysore with the title "Dharma Prakasha Raja Karya Prasaktha" for his extraordinary service in the field of education. The legacy he once began is being upheld with the same zeal by his inheritors and they continue to cherish his vision and ideals.

After the sad demise of Sri B.M Sreenivasaiah, his renowned son, Sri B.S Narayan, a vibrant and ingenious personality, moulded BMS College of Engineering into one of the finest engineering colleges. Apart from BMS College of Engineering, he had also established other institutions that promoted higher education which includes BMS College of Law, BMS College of Women and BMS Evening College of Engineering. He was extremely supportive in the initiation of several collaborative programs such as training foreign students under International Co-operative Division, cross cultural program with Melton Foundation U.S.A etc.

BMS Institute of Technology (BMSIT), established in the year 2002 is one of the six institutions under BMS Educational Trust, being managed by a council of trustees appointed by Dr. B.S. Ragini Narayan, the successor of Late Sri B.S Narayan and the donor trustee and Member Secretary of BMS Educational Trust and it is one of the best engineering college in bangalore. BMS School of Architecture is the latest addition to the BMS group of institutions.

# WHAT WE HAVE FOR YOU

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# Vision & Mission

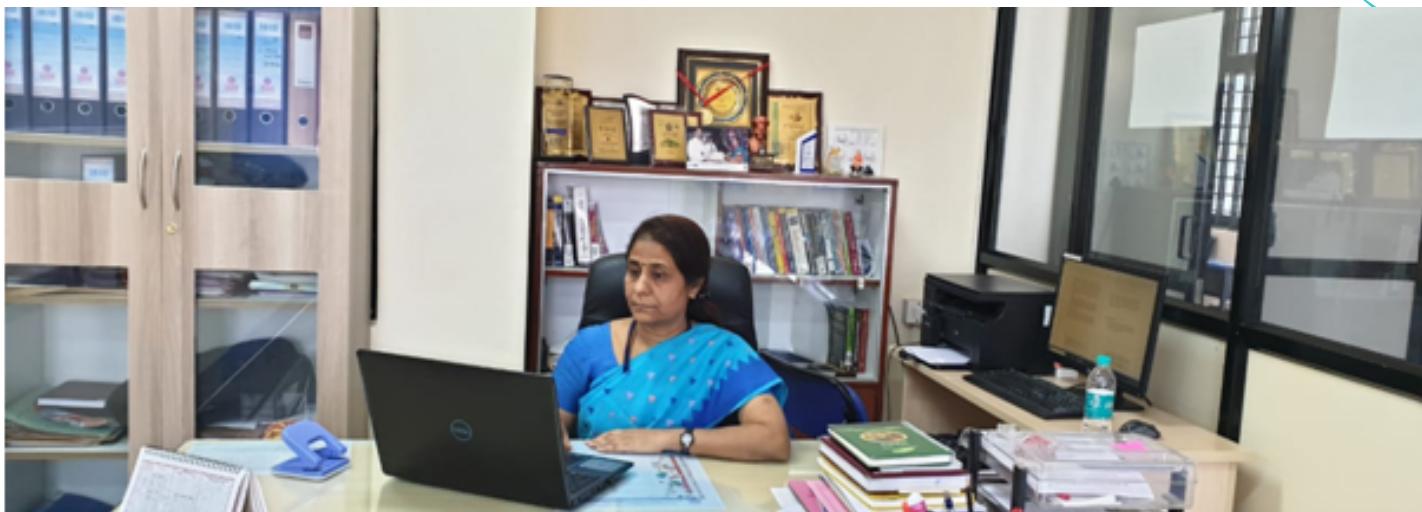
## VISION :

To develop professionals equipped to build sustainable and intelligent solutions that effectively interact with the natural intelligence towards creating a digitally empowered environment for future generations, safeguarding social ethics.

## MISSION :

- To enable students with the spirit and power of interdisciplinary acumen by integrating a world of knowledge into a world of intelligent systems and subsystems.
- Boost academic outcome through place-based education and collaborations with established research labs and industries.
- Encourage entrepreneurship efforts among students and develop them into great leaders.

# HOD'S MESSAGE



DR. BHARATHI MALAKREDDY A

Welcome to the Department of Artificial Intelligence and Machine Learning at BMSIT&M, Bengaluru. The Department is the realization of our Management's vision of offering an undergraduate program in the stream which is the need of the hour to address the fast-growing industrial demands to embrace the technology of Artificial Intelligence and Methods of Machine Learning. Under the visionary leadership of our beloved Principal, Dr. Mohan Babu G N, we started our exciting journey in the year of 2019, with a sanctioned student strength of 60.

We, in our Department, offer a large number of optional courses for providing a wide spectrum of options to the students to pursue their interests. The primary focus of our curriculum is to impart technical know-how to students, promote their problem-solving skills and innovation of new technologies introducing new developments.

Our department maintains active research groups for carrying out collaborative and interdisciplinary research. We have state of the art research facilities to support our academic programs and research. At present, the department faculty are guiding 6 Ph.D. scholars from industries and academics.

Our department has a distinguished record in both teaching and research. Faculty members have excellent academic credentials and are highly regarded. They review technical articles for national and international journals. It is with great pride and immense pleasure that the Department of AI&ML is releasing its first **Biannual Magazine "The Circadian"**.

This magazine encapsulates a testimony of talent and treasure of academic acumen of the students and faculty members of this department.

The magazine plays an instrumental role in providing exposure to the students to develop written communication skills and command over the language. It is heartening to find that our students look forward to contributing to solving the technological challenges of society with active participation, perseverance, and hard work. Skill & knowledge relevant to real-world problems is inseminated to produce dynamic, socially conscious and sensitive human beings.

I extend my sincere regards to all the students and wish them success in all their endeavors. I hope you enjoy reading this magazine as much as we enjoyed working towards its creation, and more importantly, I hope that the articles in this magazine inspire the readers.

I congratulate and appreciate the expediency of editorials board and contributors of this magazine. Best wishes,

**Dr. Bharathi Malakreddy A**  
**Professor and HoD**  
**Department of**  
**Artificial Intelligence and Machine Learning**  
**BMSIT & M**

# THE EDITOR'S DESK



DR. SANTHI NATARAJAN

Think of intelligence as the ability to observe, evaluate and change. We, the Editorial Team of Circadian, proudly present our first endeavour in pursuit of touching the sky of being cognitively and emotionally intelligent leaders with a mission. It gives the 2019-2023 batch of Department of Artificial Intelligence and Machine Learning, immense pleasure to be the flagbearers of this very ambitious undergraduate programme. We, the faculty and the students, together shoulder the dreams and vision of creating the best talent for the most sought-after skill set in the industry.

Great things are not done by impulse, but with a series of success, failure and sacrifices intricately woven with fragrance of elegance and gratitude. The Circadian's first volume presents the proud journey of our department so far, and the road carved out for the future. The stories here speak the extraordinary passion and commitment that has the potential to convert a talent to a genius. We look forward to exciting years ahead, coming back to our readers with promising success stories to satiate their inquisitive minds!

Sit back and enjoy the journey with us!

**Dr. Santhi Natarajan  
Associate Professor  
Dept of Artificial Intelligence and Machine Learning  
BMSIT & M**

# Editorial Team

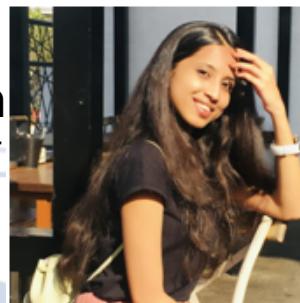


**Dr. Santhi  
Natarajan**

Faculty Co-ordinator



**Sadanand  
Venkataraman**  
Student Co-ordinator



**Ananya Malagi**  
Design Co-ordinator



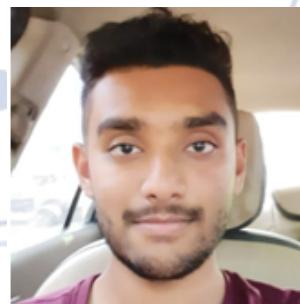
**Gowtham  
Senthil**  
Editor



**Rtwick G  
Moses**  
Editor



**Aditi N**  
Curator



**Shreyas S**  
Curator



**Arun Joseph**  
Portal Moderator



**Tejas M A**  
Portal Moderator

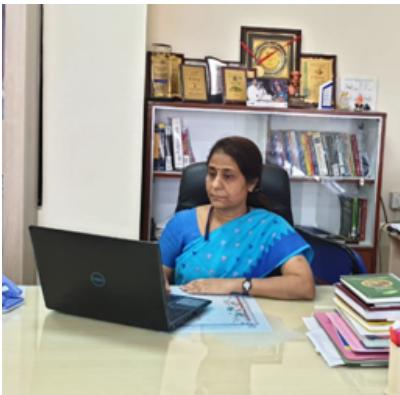


**Jonathan  
Clyde D'Silva**  
Class Representative

# FACULTY INTRODUCTION

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

## TEACHING STAFF



**DR BHARATHI  
MALAKREDDY**

HEAD OF DEPARTMENT  
PROFESSOR



**DR SANTHI NATARAJAN**  
ASSOCIATE PROFESSOR



**DR. ANUPAMA H S**  
ASSOCIATE PROFESSOR



**DR VISHWA KIRAN S**  
ASSISTANT PROFESSOR



## NON-TEACHING STAFF



**MANU K V**



# THE BEGINNING OF AN ERA



Inauguration by Honorable Chairman Dr. M Madan Gopal  
Trustee, BMSET



Lighting of the lamp by our beloved principal  
Dr. Mohan Babu G N



Floral Decorations at the entrance



Dignitaries and Faculty members at the e-inauguration

A New Beginning! Our Department was formally inaugurated on 02-Aug-2019, in the esteemed presence of our beloved Chairman **Sri. Madan Gopal, IAS** and our visionary leader, Principal **Dr. Mohan Babu G N** and several other distinguished dignitaries. The event drafted the script for a new chapter in the history of our college to offer an undergraduate program in Artificial Intelligence and Machine Learning, a much sought-after skill set for the future.



# INDUCTION PROGRAMME



Students during their field trip at Nimhans Brain Museum



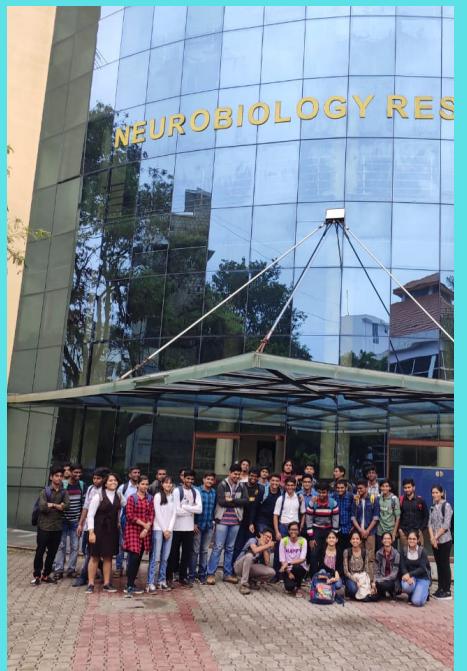
Students at GKVK

The first batch of students for the undergraduate program in Artificial Intelligence and Machine Learning received a warm welcome to the college. The inaugural ceremony saw the illustrious addressing by Dr.Karisiddappa, Honorable Vice-Chancellor of Visvesvaraya Technological University, our beloved Trust Chairman Dr. Dayanand Pai and our respected Principal Dr. Mohan Babu G N set the stage for the formal launch of the new undergraduate program. The students, parents and the faculty shared a sense of pride, achievement, and enthusiasm to be the first members of a long and eventful journey by joining the department.

Then, the students were formally inducted to the department through a ten-day long rigorous and eventful induction program. The students and parents had a very interactive session with the faculty of the department. Many questions regarding opportunities for research, higher studies and placements were addressed in the gathering by the faculty members.

The parents were assured about their ward's successful journey to achieving their goals and look forward towards a bright and promising future. The objective of the program was to make the students feel comfortable in their new environment, create a strong sense of belonging and bonding with the faculty and batch-mates, develop awareness and understanding of self, environment, and society at large.

The program also covered sessions that touched upon the critical chasms and sensitize the students towards exploring their passion, and interest in academia, research and other extracurricular activities. It helped in developing a healthy academic environment and overall personality development.



**"LEARNING CANNOT BE DONE CONFINED WITHIN FOUR WALLS "**

# INDUCTION PROGRAMME



Clockwise from top left: Students in an Interactive Seminar; Parents during the Orientation Programme; Students along with their parents during the Orientation Programme.

# DEPARTMENT EVENTS



## THE EXPERT TALK !

BY DR SIVAKUMAR

An expert talk was delivered by Dr. Shivakumar, Associate Professor, Faculty of Computer Science and Information Technology, University of Malaya, Kuala Lumpur, Malaysia, on “Artificial Intelligence-A Current and Future Overview” in Sept 2019.

## DEPARTMENT ADVISORY BOARD MEETING



The first Department Advisory Board meeting was conducted in our department on 7th September 2019 in the august presence of our beloved Principal, Dr. Mohan Babu G N. The meeting had Dr. Dinesh Kumar (IIMB), Srinivasan Govindaraj (Director and Head Data Sciences Happiest Minds Technologies) and Nazar S (Senior Partner Manager ARM) joining external experts.



**Shreeya G** of the first-year batch of AI & ML branch was present as the student member, joined by a parent representative. The meeting was presided by Dr. Bharathi Malakreddy A, our HoD and Chairman of DAB. The faculty members Dr. Santhi Natarajan (DAB coordinator), Dr. Anupama HS and Dr. Vishwakiran also joined the meeting to discuss the future road map for the department. The valuable advice and constructive comments from the external experts were taken into account in setting the milestones to be achieved for the department.



Students celebrating Ayudha Pooja  
in the Department

## AYUDHA POOJA

The Department celebrated Ayudha Pooja in October 2019. On this special day, students decorated the Classroom and Office with plantain trees, mango leaves and glazing papers followed by a Pooja in the presence of our beloved Principal, Dr. Mohan Babu G N, and BMSIT&M family.

The remarkable part of this celebration was that the students dressed in their best of ethnic costume and the mouth-watering snacks that were served for all the students and staff.

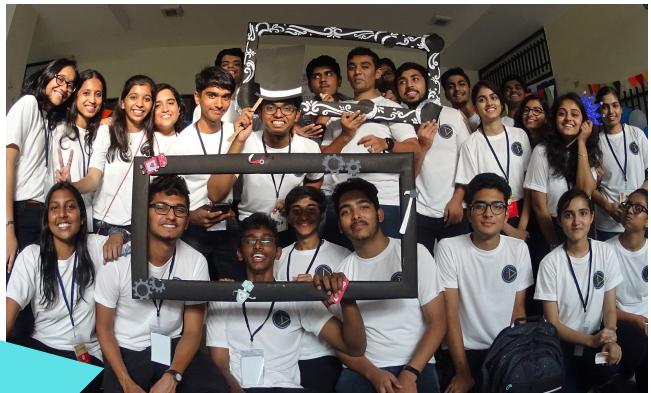
## TRANSCENDENCE !

TRANSCENDENCE was one of the various technical events organized under Tech-Transform. There were various events like **poster presentation, blog writing and virtual hunt** that were organized with the objective to provide a platform for the students to showcase their talent with a competitive spirit. The event was successful enough to attract registrations from Industry, Universities, and NIT Surathkal.

The winners were honored with a certificate well as cash prizes. The techno fest served as a well-deserved break that filled their minds with fruitful memories. It gave the students an opportunity to learn the lessons of leadership, teamwork, team building, working in challenging and stressful circumstances, hospitality and endless is the list of learning.

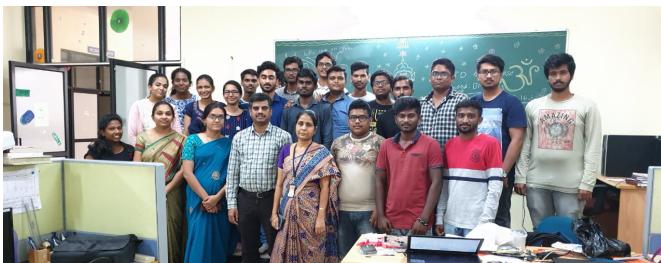


Inauguration of TRANSCENDENCE by  
Principal Dr. Mohan Babu G V



The team behind TRANSCENDENCE

## OPEN COURSE - INTELLIGENT IOT



Students after successfully completing the Open Course on Intelligent IoT

The department organized an open course with a title "INTELLIGENT IoT: **Absolute End to End Communication**" for five days during 22nd and 26th 2019. This course was designed for those who want to build powerful and inexpensive IoT applications using Raspberry Pi. Practical demonstration of Setting Raspberry PI as a PC, Connecting Via Internet WiFi, Types of Sensors Server, Controlling Objects anywhere from the world WiFi. Mounting and setting up external storage on a Raspberry Pi was covered in this course. Dr. Bharathi Malakareddy and Dr. Vishwa Kiran was the resource person for the workshop. A total of 30 students from different branches got benefited by attending this course.

## PARENTS-TEACHERS MEETING (PTM)

Parents-Teachers meeting for the first-year students of our department was hosted on 2.11.2019 from 10.00 AM to 12.00 PM. The meeting was addressed by the HoD Dr. Bharathi Malakreddy A, Dr. Anupama H S, Dr. Santhi Natarajan, Dr. Vishwakiran. The faculty updated the parents about their ward's performance who in turn appreciated the proctoring system, personal care of students and also discussed the queries of college transport and various other activities carried out in the department.

## AICTE ACTIVITY

The department organized this activity on 3rd November 2019. The students and faculty left the campus at 8:45 AM towards Yeliyuru to clean up the village. All the students were asked to get their gloves, first aid related materials, lunch and other stuff in which they feel that it is required. A Gram Panchayat member was already present there to receive us. They provided all the materials which are required to clean the village, like brooms, plastic covers to pick up the dust, and so on. They were also told which area of the village to be cleaned. We cleaned the public places and Gram Panchayat of that village.



Students ready to make a change, one step at a time

# RESEARCH & FUNDING

## Research Fundings

Research grant of INR 20.00 Lakhs from Vision Group of Science and Technology (VGST) for the project titled “Establishment of Centre for Design and Research of Healthcare Applications using Artificial Intelligence”: Principal Investigator: Dr. Bharathi Malakreddy A

## NDA

NDA signed with leading healthcare service provider to pursue research in Radiomics with Artificial Intelligence and Machine Learning

## Industry Collaborations

Collaborations with industry partners for consultancy and research

## Research Student Activities

- 6 Ph.D. research students pursuing research in various exciting research areas under the able guidance of Dr. Bharathi Malakreddy A
- The doctoral committee meeting for the research scholars of Dr. Bharathi Malakreddy A was held to evaluate the progress of the research work and provide directions for future work.
- The contact classes for the research students were given by Dr. Santhi Natarajan, covering the topics of radiomics, genomics, and computational pipelines.

## Patents

- Filed a Patent on IoT Product. Dr. Bharathi Malakreddy A

## Consultancy

- Expert talk delivered by Dr. Santhi Natarajan as part of executive training programme at Larsen and Toubro, Mumbai

## Research Publications

### DR BHARATHI MALAKREDDY

- Published a Book Chapter on Comprehensive Review on Automatic Diagnosis of Diabetic Maculopathy in Retinal Fundus Images- Advances in Signal Processing and Intelligent Recognition Systems, Vol 968 – Springer Publications, Singapore (Scopus Indexed)
- “A Novel Method for Automatic Identification of Fovea Location and its Centre in Color Retinal Fundus Images”, International Journal of Medical Engineering and Informatics, Inderscience Publishers (Scopus Indexed)
- “Laplacian Matrix-based Spectral Graph Clustering for High Dimensional Data”, International Journal of Innovative Technology and Exploring Engineering (IJITEE), ISSN: 2278-3075, Volume-9 Issue-2S, December 2019 (Scopus Indexed)“
- Recent Advancement of Auto-Scaling in LTE M2M Communications ”, International Journal of Innovative Technology and Exploring Engineering (IJITEE), ISSN: 2278-3075, Volume-9 Issue-2S, December 2019 (Scopus Indexed)

### DR SANTHI NATARAJAN

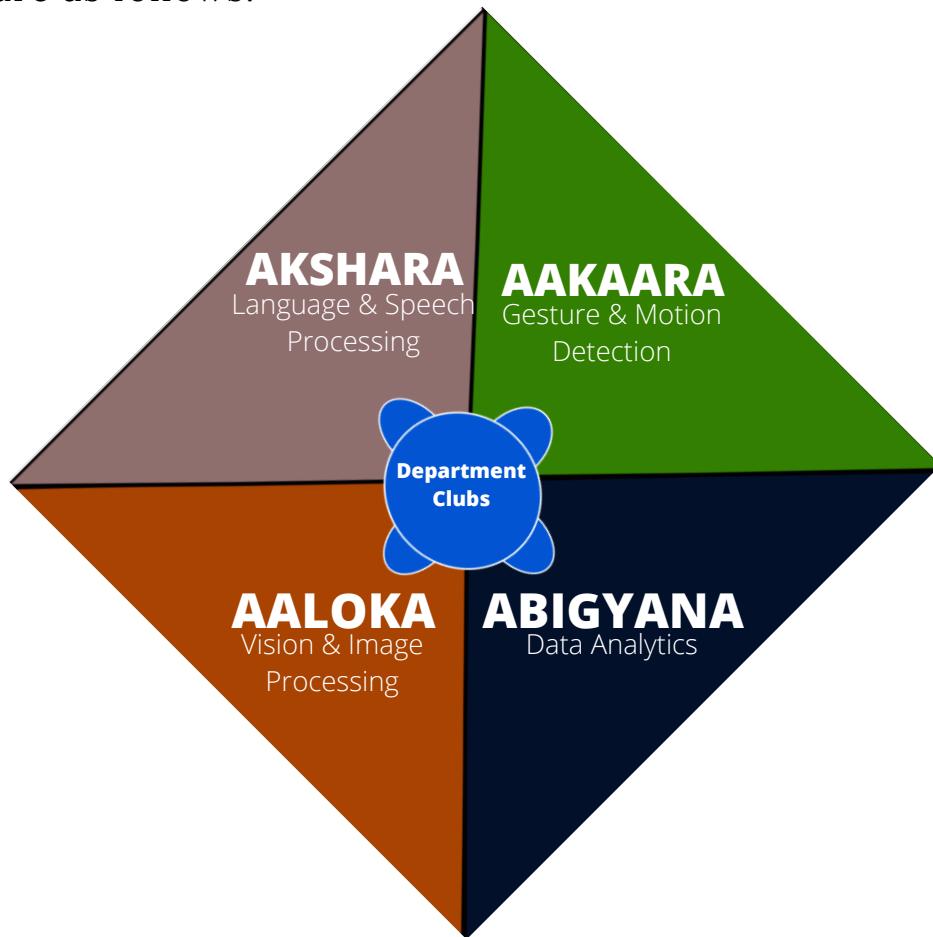
- Research paper in the field of “Precision Nutrition” accepted for publication in the proceedings of Euro Food Summit, London, May 2020
- Research paper in “Time Series Analysis with Machine Learning”, accepted for publication in the proceedings of INDIACOM, March 2020

### DR. ANUPAMA H S

- Published a Book Chapter on: “Machine Learning and Artificial Intelligence: Rural Development Analysis Using Satellite Image Processing” in IGI Global (Scopus Indexed).

# DEPARTMENT CLUBS

The research activities in the department is spearheaded within four broad verticals, organized as technical clubs of the department. The details are as follows:



CLUB	STUDENT COORDINATOR	PROJECTS	NDA/MOU
AKSHARA	PRANAVI	1. NLP LIBRARY AND PRODUCT DEVELOPMENT FOR LANGUAGE GENERATION 2. INTERACTIVE NLP PRODUCT DEVELOPMENT FOR CONSUMER DATA PROCESSING	TALKS IN PROGRESS TOWARDS SIGNING MoU
AAKARA	MADHUMITHA	1. PRODUCT DEVELOPMENT FOR ASSISTIVE TECHNOLOGY FOR SPEECH IMPAIRED	NDA SIGNED WITH PARTNER IN MEDICAL FIELD (FOR 1 )
AALOKA	PRATIKSHA RAO	1. MEDICAL IMAGE PROCESSING 2. RADIOMICS RESEARCH ON CONCUSSION AND HISTOPATHOLOGY ON ONCOLOGY	NDA SIGNED WITH PARTNER IN MEDICAL FIELD
ABIGYANA	RTWICK, LAKSHMI PRIYA	2. DECISION MAKING IN FINANCE AND STOCK MARKET 3. GENOME INFORMATICS FOR PSORIASIS AND COGNITIVE DISORDERS	NDA SIGNED WITH PARTNER IN MEDICAL FIELD (FOR 1 ) FUNDED PROJECT FROM VGST FOR SOLUTIONS IN HEALTHCARE

# FACULTY ACHIEVEMENTS

## **DR BHARATHI MALAKREDDY, PROFESSOR, DEPT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING**

- Doctoral Committee member for research scholars at Reva University.
- Doctoral Committee member for research scholar at PDA college of engineering.
- Expert Talk on Industry 4.0 and Internet of Things for Oil and Gas Refineries at Indian Oil Corporation, Chennai
- Reviewed technical papers for INDIACOM 2020
- Reviewed technical papers for IEEE CONNECT 2020
- Guided 3 Projects of B.Tech Program, NITK, Surathkal. Chaired Session at International Conference on Data Engineering and Communication Systems (ICDECS 2019) held during December 19-20,2019 at RNSIT, Bangalore.
- Expert Member, Board of Studies(BoS) for CSE Dept, PDA College of Engineering, Kalburgi.
- Best Innovator Project Award by ICT Academy, New Delhi, and Karnataka State Industries.
- Resource Person in Open Course for Session on IoT by AI &ML Dept.
- Board of Examination (BOE) Member for ISE Dept. MSRIT, Bengaluru

**DR SANTHI NATARAJAN, ASSOCIATE PROFESSOR, DEPT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING**

- Expert Talk on Artificial Intelligence, Machine Learning and BlockChain for Oil and Gas Refineries at Indian Oil Corporation, Chennai
- Expert Talk in Faculty Development Programme conducted by the Department of Mathematics, BMSIT & M, Bangalore
- Expert Talk in Open Course conducted by Department of Electronics and Communication, BMSIT & M, Bangalore
- Attended one day workshop in IoT in Agriculture: Karnataka Focus, in Indian Institute of Science, Bangalore
- Initiated research projects in the department and active member of the Radiomics Research Group, active participation in signing NDA with a leading medical service provider.

**DR. ANUPAMA H S, ASSOCIATE PROFESSOR, DEPT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING**

- Reviewed technical papers from International Conference on Computational Systems and Information Technology for Sustainable Solutions (CSITSS-2019), R V College of Engineering, Bengaluru, India, December 20-21, 2019.
- Reviewer for Journal of Education.
- Has delivered an expert talk on "Discrete Data."
- Mathematics and its Applications: on 16th Sept 2019 for 3rd semester students at RRIT, Bengaluru.
- Dr. Bharathi M A, Dr. Santhi Natarajan and Dr. Anupama H S have visited NVIDIA Pvt Ltd for the discussion on Data Analytic Lab.
- Has completed NPTEL online course on "Discrete Mathematical Structures" on 6th December 2019.

**DR VISHWA KIRAN S, PROFESSOR, DEPT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING**

- Handled a corporate training assignment for Siemens Technology and Services Ltd for 19 working days during July and August 2019 on various technologies like C++, WinDBG, COM, Operating System, Data Structure.
- Resource person for Internship on IoT at BMSCE
  - 8 days – July/August 2019
- Resource person for C++ Programming Training at Western Digital (JAPAN)
  - 2 days - Oct 2019
- Resource person for IoT Workshop at University Visvesvaraya College of Engineering – 3 days Nov 2019
- Delivered a keynote talk about "Skill required for IoT Domain" at Cambridge Institute of Technology on 16th Dec 2019
- Delivered a talk on 11th January 2020 on a topic "Massive Parallel Super Computing Using OpenCL Framework on the Heterogeneous Computing Platforms" as part of two weeks workshop sponsored by AICTE at Don Bosco Institute of Technology
- Delivered a talk on "ARM" technology at VTU Muddenahalli as a part of 5 day FDP on "Microcontroller and Embedded System." Date: 20 Jan 2020

# STUDENT ACHIEVEMENTS

*The department takes pride !*

## SPORTS :

**"SPORTS ARE SUCH A GREAT TEACHER. I THINK OF EVERYTHING THEY'VE TAUGHT ME: CAMARADERIE, HUMILITY, HOW TO RESOLVE DIFFERENCES."**

-KOBE BRYANT

## Football At BMSCE

by George Moses



Sadanand with the BMSIT&M Football Team

Sadanand fell in love with the game of football during his sixth grade and has gone on to do very well for himself in this sport. He currently coaches for Crescent FC and is a part of the college team which put on a valiant show during the BMSCE competition, where it came down to the wire but they sadly lost in the penalties, he plans on continuing his journey in this sport and see what the future holds.



Tejasvi with the BMSIT&M Basketball Team

## BMSIT & M qualifies to the Semifinals

by Tejasvi S Kalburgi

Tejasvi's take on his most beloved sport: Basketball in 8th grade I found my calling in basketball and my biggest inspiration since then has been Michael Jordan. I decided to join BMSIT&M as I was sure of the endless opportunities to play basketball and take part in various collegiate tournaments.

The VTU tournament was the best learning experience for me since most of the VTU affiliated colleges had the best players in Karnataka. I made a lot of friends because of these tournaments and this has helped widen my social circle.

A few of them from other colleges were open to training me to help me excel at the game. We came second in the VTU North zone Intercollegiate basketball tournament held at Nitte Meenakshi Institute of Technology.

Tournaments like these have helped me understand where I stand in terms of talent and work ethic amongst those in Bangalore. To conclude, each day I have the best experience in the game I love and I am ever grateful for all the knowledge which drives me towards perfection.

## INTERNSHIPS :

### 1. Sadanand's internship

#### **purpos.ai**

This is an app whose aim is to make the sports training methods in India more simple. They are branded as a cloud-service for sports academies. I learned about them through my camp where I coach. I got in touch with one of their engineers, went through an interview and started interning with them. I've learned a lot in my internship of 15 days. I am working on a machine learning model related to their football services and have completed a map of how coaches can rate the students. My next step will be to build an algorithm to implement the same and I'm nothing but excited as this internship provides me, the best of both Football and ML



“

Rise up  
start fresh  
see the bright  
opportunity  
in each  
new day

### 2. Gowtham's internship



Sirena Labs started with an idea of making an advanced humanoid in India, has now moved its way into the field of IoT. During the period of my internship from 31st Jan to 7th February, I had the opportunity to have an insight into their IoT products and the basic circuits that compute a Robot. I learned the workflow of an Alexa speaker, different methods of testing a manufactured product, the protocols used in an IoT device, Socket programming, configuring and working on Raspberry Pi, but most importantly I worked on my interpersonal communication skills since I had to understand how to approach, talk and respond to different people from different backgrounds at the workplace. Overall this has been a delightful experience and given me a precise insight into an employee's life.

### 3. Shreyas's internship

A Minute Workplace Experience

Incident number 1:

It was the last day of our exams, and an opportunity just drops on my lap. I'm to travel with my granddad under his wing and experience how the different market strategies out there are portrayed. I was made to talk to the various companies (machine tools) present and market our company (Part of the trading field). To be honest, I was extremely nervous in the beginning, but it gradually started to heat me up and in the end, I think I bagged a big client.

Incident number 2:

When the marketing part was done, Robotics (The goal of that day) was explained to me in quite some detail. In this case, the robot present was a welding robot. I learned about how the robot was manufactured, what techniques it uses while doing its assigned job, and how much it would cost in liquid funds. Apart from this, I learned about how AI was being introduced in this part of the robotics industry. Since the technology is still in the stages of having been born, there wasn't much that I found.

In conclusion, as the AI & ML field is particularly booming with the expectations of having a pretty accurate result while doing any sort of function, I am excited to see what the future holds in store for us!

### LITERARY ACTIVITIES :

#### Sri Lakshmi Priya's Poster Presentation

On the 1st of October, Nagarjuna College of Management and Studies hosted a one day National Conference on "Emerging trends, innovations and applications in science and technology". I'm extremely glad to have got an opportunity to take part in the conference, to present a poster on Chatbots.

The presence of Dr. Udaya Shankar Puranik, a Data scientist, made the session more informative and interesting. It truly was an amazing experience that would be of great use in my future endeavors. I'd like to thank Mrs. Srivani for all the guidance and motivation. I also want to thank the Department of AI and ML for the support.

## EXTRA CURRICULAR ACTIVITIES :

### 1. Aditi's experience at an NGO

#### The Sense of Gratitude

We all practice gratitude every day with a simple ‘Thank You’. We often take things granted in our life, whereas, we need to be grateful for what we’ve been provided. There are so many people on this planet deprived of basic amenities and we aren’t thankful for what we have. We live in a sort of delusion that even though, we have resources to survive, we still aren’t equipped to live the “good life”.

I too used to live in this delusion till, I started working at this amazing NGO called U&I; I learned about its existence from social media and all they asked was 2.5 hours of my time, per week. It was that simple. So, I applied to the center closest to my home and took up the role of teaching an underprivileged child English, every week.

Honestly, it changed my life. Meeting those kids, for the first time, made me realize that I need to be grateful for what I have. I’ve had a good education, good facilities and most of all, I have loving a family and friends. These kids are just happy if they are gifted new books. Spending time with them has definitely changed my outlook on life. Now, it’s been nine months with these kids and they have thought me some of the biggest lessons. Most importantly, to have a sense of gratitude.

### 2. Ananya's experience and learning!

Exploring and Learning never meet any end is the belief I carry!

Being versatile and accepting any challenge that comes your way has its perks. Having learned dance and music I had the privilege to teach what I learned to a kid, the satisfaction one gets cannot be described in words. My learning was "GIVING BACK" selflessly go around helping.

Always had my eye on art and design, I would like to thank BMSIT&M and my department (AIML) faculty to have given me so many opportunities to express myself and always being encouraging. I had the privilege to design my department logo and many more. These opportunities drove me to strive for improvement. I started learning digital design which paved my way into doing small projects.

I would like to say that I'm a part of a start-up as one of its core team members. ROUTE 7 is the company. The experience I gained by interacting and learning how to deal with situations is definitely worth it .

## THE STORY OF KE JIE, AND WHAT IS ARTIFICIAL INTELLIGENCE?

Let me tell you the story of Ke Jie, Ke Jie was born in the town of Lishui in the province of Zhejiang in China, he was a bright young boy and his family noticed his high IQ and like any other child with high intellect he was sent for classes in the game of Go an ancient board game that was treated with the same reverence as cricket in India, there were special schools built to train young people on how to master this game and by the time Ke Jie was nine years old he had won his first national championship and went on to collect accolades and had the promises of a bright career moving forward.

Now let set aside the story of Ke Jie and focus on another topic for the moment this being the ten thousand hour rule, I came across this rule while reading a book by Malcolm Gladwell which stated that as one moves further along ones field the difference due skill decreases and the difference due to practice increases, simply put to be a savant in any field one must practice their craft for an approximate ten thousand hours or roughly twenty hours a week for ten years straight, this is a rule of thumb and is considered to be a reasonably accurate truth.

So how does the story of mister Ke Jie and the ten thousand hour rule come together, well because on twenty-seventh may 2017 the rule was broken and Ke Jie who had now become one of the best go players in the world had been defeated and the interesting detail was that he had been defeated by no man but by machine who had up to three weeks ago not existed, so how did this piece of code defeat a man who had put in all the work and done his diligence?

The answer lies in the rule, the ten thousand hour rule. We can assume that Ke Jie had already practiced Go for more than ten thousand hours, but what about the machine how did it fulfill this criterion?

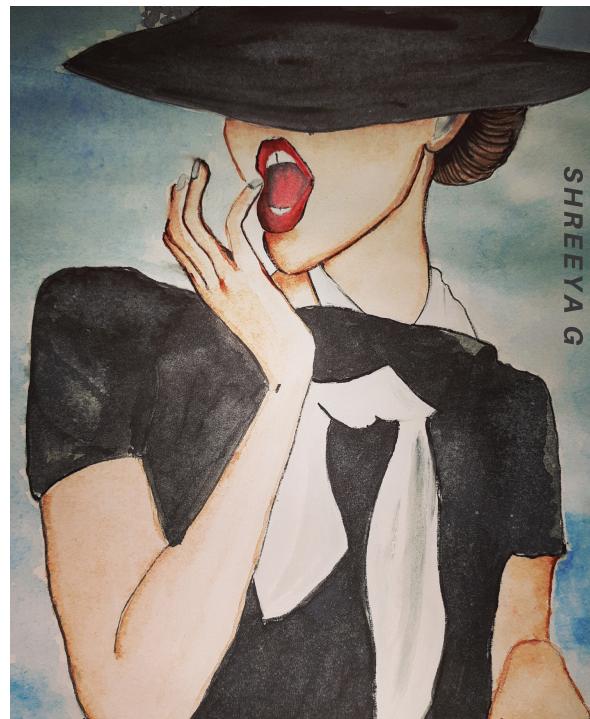
**TO BE  
CONTINUED ...**

## STUDENT SUBMISSIONS



SHREEYA G

**"We need women who are so strong they can be gentle, so educated they can be humble, so fierce they can be compassionate, so passionate they can be rational, and so disciplined they can be free."**  
– Kavita Ramdas



SHREEYA G

...well in a way it did the code practiced against itself and improved from its mistakes and it did not play at the same tempo of a human match, it also started to play multiple matches simultaneously against itself and soon it was clocking hours of work in seconds and by the date of the match, it had comfortably cleared the threshold and defeated a world champion.

So, in a nutshell, this is what artificial intelligence is, it encompasses the ability of Machine to work and react like a human being but also has the speed and efficiency of a computer, and the implications of this technology are ground shattering and Mr. Ke Jie may only have been the first of many whose world may have been transformed by such machines, and so the question remains as the efficacies of the technology is in question but one thing is sure there is no going back for now and change is just around the horizon.



GOWTHAM S

## QUESTIONS AND QUESTIONS...

### The Chimera On AI vs Its Reality

by Mirza Fardeen Baig

Artificial intelligence (AI) isn't new, what is new is the growing ubiquity of AI. In the present technical era, AI remains to be the vogue and therefore gravitates every human, but there still lies a modest fear of adopting it. Just like everything around us, AI also has its advantages and disadvantages, and when we analyze the disadvantages, unemployment seems to daunt people about AI.

### But, can AI really replace humans?

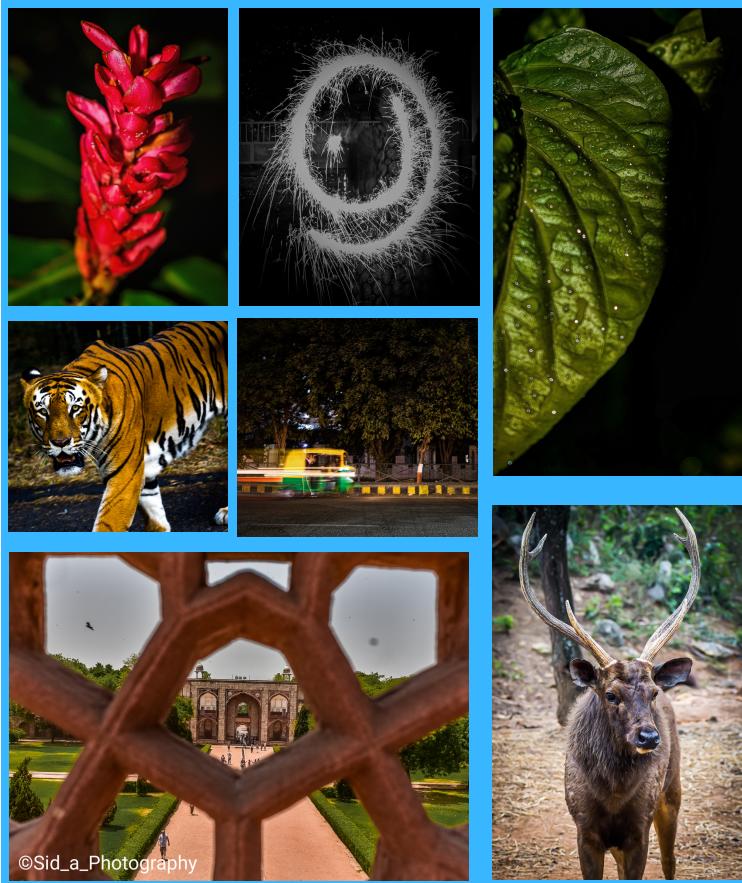
For most sectors AI was never about replacing humans from their work, it was created to assist them in the most productive way it can which usually requires a lot of human effort and working hours, due to complexities. AI was solely developed for augmenting our lives and amplifying our skills or capabilities.

### Why AI can't replace every other job?

Right now, Artificial Intelligence itself as a technology is so primitive that either we won't reach the singularity or if we do it's very long ways off, so as far as this scenario is concerned it can't replace us, except few applications like "self-driving cars", "Domestic Works Robot" and other few. There are very few jobs that are 100% vulnerable to losing to AI.

## PICTURE GALLERY

### Siddharth Arora's Submissions



### Ananya's Logo contributions for BMSIT&M



### AI&ML Students during the course of the Semester



# My Experience in the Land of the Rising Sun

by Dr Vishwa Kiran S

It was an excellent opportunity for me to visit Japan in the second week of October 2019 for a corporate training assignment. This was my second visit to Hitachi Global Storage Technologies, a Western Digital company located at Fujisawa, 45km from Tokyo. As we all know the Japanese are famous for their punctuality and hardworking and this time I experienced it. The behavior of the participants reminded me of the Gurukula System of India where students used to follow Guru without any deviation. The professionals who attended my C++ training had 10 to 20 years of experience in firmware development and C programming. I must thank Mr. Tsuguaki Kowa(Manager) for extending me all the support during the training and guiding me to use the public transport system in Japan.



DR. VISHWA KIRAN S WITH MANAGER  
MR. KOWA OF HGST



DR. VISHWA KIRAN S OF BMSIT WITH PROFESSIONALS OF  
HGST A WESTERN DIGITAL COMPANY

## Switching Roles

A seminar was conducted by our students, **Arun Joseph and Tejas M A**. The seminar was organized by Ms.Srivani of the Computer Science Department. The seminar was about ' Introduction to HTML and CSS. They covered basic topics such as creating, linking and customizing webpages. The seminar also included image mapping, through which we can link different pages to specific locations within the image. Students from the AI&ML attended this seminar and benefited from it.

## AI IN REAL ESTATE

by Gowtham Senthil

Getting high-quality authentic photographs of home rental properties at scale is a problem we deal with daily. If we source the photos directly from homeowners, the quality is usually not great. Getting the right angles, setting and lighting is a problem that requires skill and patience. The photos lose authenticity if heavy post-processing is done. There is also the problem of ensuring photographs taken across different homes are consistent so that customers can compare homes easily. All these require companies to rely on heavy training and audits. I would like to see a simple AI-based tool that assists homeowners with taking consistent good quality photos. The tool could give suggestions of good angles based on a preliminary video of the house exterior or interior and help score photos taken based on aesthetic appeal. The tool could use object detection to identify unclean spaces, old clothes, bad lighting and suggest corrective actions to the homeowners.



Courtesy : Times of India

# ROBOT-TUTORS

by Aditi N

Mechanical mentors try to find their place as a teacher's helper.

In a school in Boston, a robot called TEGA helps the students learn basic vocabulary, exactly what a teacher would do.

The robot shows a series of images and asks the child, what he's expected to do, to which, the child replies he's supposed to find lavender objects. Here, lavender, being the new word. If the child fails to do so, the robot encourages him to practice more. The child believes in the robot's words and is eager to do better next time.

This kind of tight connection is typical of child-robot interactions, says MIT social robotics and human-robot interaction researcher Cynthia Breazeal. Her team is investigating how this turn-taking robot can help students learn. Kids have a "special kind of affinity" with robots, she says. Although adults might quickly become disenchanted with machines that aren't very perceptive or don't speak more than scripted sentences, children are liable to chat with, listen to and otherwise treat even basic robots as sentient, social beings.

These robots aren't meant to replace human teachers, says Paul Vogt, social robotics and language development researcher at Tilburg University in the Netherlands. But customizable, endlessly patient automatons could provide students with one-on-one attention in crowded classrooms. That extra support may be especially helpful for children with special needs or for students who are learning in a different language than they're used to.

Robots might also help homeschooled students, proponents say, or teach in areas where human experts are in short supply. English-speaking robots are slated to enter some 500 Japanese classrooms this year for exactly that purpose.

Hundreds of Chinese kindergarten classes also have adopted educational robots. But in Western countries, these devices have yet to invade classrooms.

There's something about robots that sets them apart from a computer. The same content delivered by a robot somehow makes our brains sit up and pay attention.... We don't yet know why that is. Still, roboticists have exploited that attention-grabbing edge to build machines that relay information on everything from math to nutrition and sign language.

**Of course, a well-rounded education is about far more than learning facts. It's also about developing good study habits and attitudes toward education that will make students lifelong learners. In this area, robots have proved useful.**

**On a very basic level, robots can make schoolwork more fun, proponents assert. If kids enjoy learning, they're going to learn more.**

**Researchers at the University of Wisconsin-Madison witnessed robots' power to make schoolwork fun when they designed a bot named Minnie to support children's reading at home. Minnie, reads aloud, shows emotional responses to stories and summarizes plot points to support reading comprehension.**

**Educational robots have been designed to help students learn a wide range of topics, from handwriting to mathematics.**

**Tega reads child's next reaction and tailors behaviors to make child happier and more engaged**

**"The robot slowly learns which ... behaviors result in high valence and high engagement," and becomes more likely to use those behaviors at the right time, Gordon says.**

## APP OF THE MONTH



### **Money manager(Free & paid)**

Android and iOS. Money management is an important and tough part of a student's day. This app makes it easier to do one's daily Finances with interesting features.

## GAME OF THE MONTH



### **I'm Ping Pong King :)(Free)**

A simple, fun arcade game

that'll burn through time when you're waiting for your Dosa to be served.





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