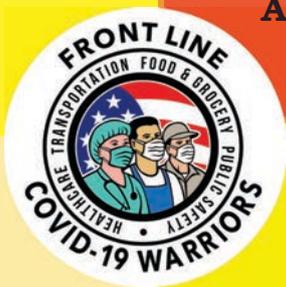




CIRCADIAN



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



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 :

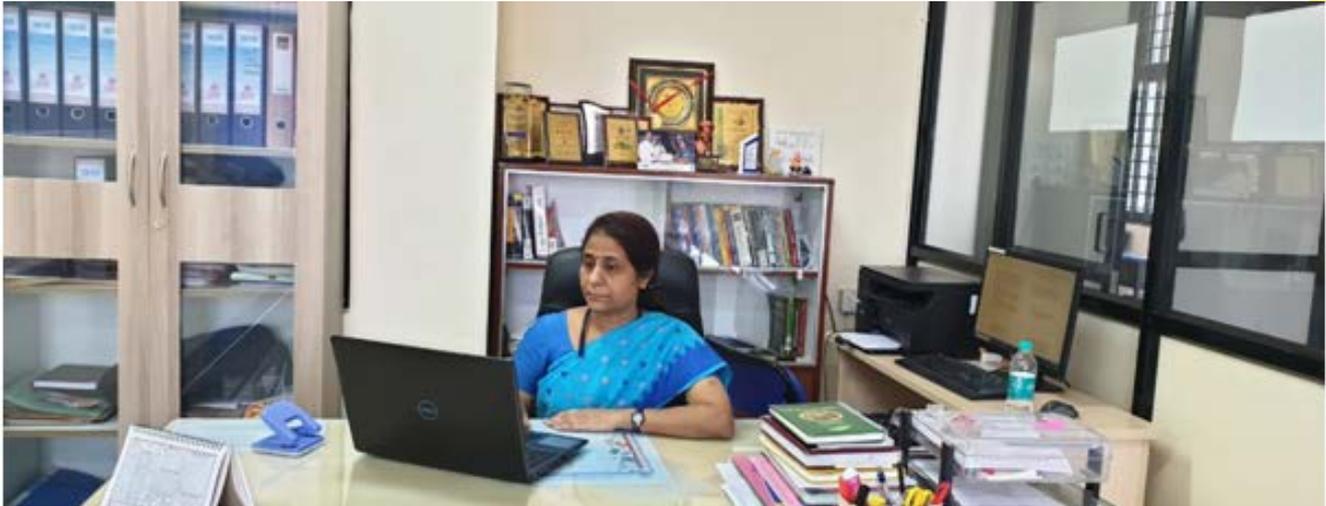
To develop professionals equipped to build sustainable and intelligent solutions that effectively interact with the natural intelligence towards creating a digitally empowered environment for future generations, safeguarding sociaethics.

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

Real change takes place in deep crisis and will not stop the momentum that will build. Every educational institution is not just a learning institution but a social fabric. The routine has gone haywire, the playtime is zero and there is no separation between home time and college time, it's a crisis for all. Every house a college, every parent a teacher as Covid-19 impacts education all over the globe. Even though we could not stick to our existing plans, we have wisely kept a steady focus on our mission, goals, targets and principles. As a teacher, being in class has always offered me a sanctuary where I could tune down everything else and immerse myself in a community of knowledge seekers. We have responded by moving our educational and associated activities online; as a sense of immediacy swept the nation my heart dropped and a zillion thoughts started running through my head. How will I ensure my students get a good experience? What about all my interactive learning experiences? What if my student doesn't have access to the internet? How am I going to do this? While the technological know-how helped to virtually connect, it was not sufficient to continue the teaching and learning endeavor. Beyond the electronic connection, we connected emotionally -- especially in times of anxiety and uncertainty.

"We were thinking machines. We are now feeling machines that think." The pandemic has forced teachers, parents, and students to think critically, problem-solve, be creative, communicate, collaborate, stay agile and has been a major learning curve in moving toward teaching online. The impact such transitions had on students and colleagues was emotionally, psychologically and even physically explicit. However, we ensured that our students continue to learn most effectively and balance our students' mental and emotional loads, so that they may not stumble. Although the idea of being off from college for months sounds awesome, they are probably picturing a fun time, not the reality of being trapped at home and not seeing their friends and the other end teachers missing out student friends. Out beyond ideas of wrongdoing and right doing, there is a field. I'll meet you there. Likewise, in times of uncertainty and unknown, we created a space where our students' voice and insights can illuminate the path we are carving out for them and us with

proctoring and fun activities. We owe a lot of gratitude to Management, stakeholders at all levels who acted with deliberate calm, courage, humbleness and humility in a crisis to strengthen relationships with individuals both within and outside of the institution and evolve in crisis and beyond by offering both personal and professional support.

For the country to make such contributions and relive its glorious past, all of us have a scope and responsibility and I am sure that we would carve out a role for ourselves in this endeavour amidst the diverse opportunities. Spending time very well in the midst of loving family and exploring it fully in all the dimensions, time to discover and pursue interests by engaging in activities in a constructive and pleasurable way by equipping all-round capabilities and skills to keep fit is the realization of CIRCADIAN VOL 02. Finally, I wish that everyone stays well, and those with childcare challenges, people working at frontline jobs others who have experienced trauma in families hit hard by the pandemic have my total sympathy, solidarity and prayers for their well being.

With 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

Team Circadian greets you all to another exciting canto!

Circadian has matured to be a proud custom brand of the Department of Artificial Intelligence and Machine Learning. As the prize for such an extraordinary feat, Team Circadian is humbled to take up the great responsibility bestowed on it. We are back with our story of growth, a lot of small things done meticulously everyday, with the utmost joy, energy and commitment!

With new normals defined by the pandemic, our department has converted every challenge amidst the new difficulty, into an opportunity. Together, we feel more stronger than ever, more braver than we believed and much more successful than ever before. While breaking with the familiar past, we march through uncharted territories and portals, to a future world. We aim to build a new world of belief and hope with profound gratitude to everything that brought us together! The rhythms of the future are the sounds of today, where we add every note with utmost confidence and care!

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



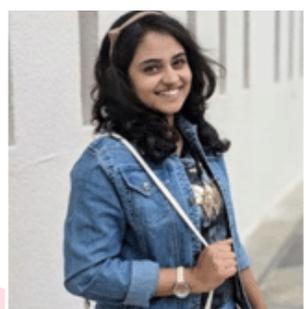
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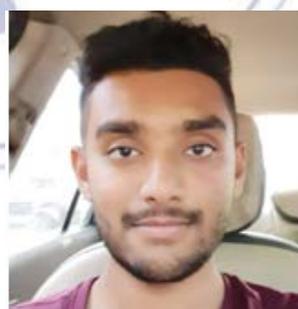
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Tejas M A
Portal Moderator

FACULTY INTRODUCTION

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

TEACHING STAFF



DR BHARATHI MALAKREDDY
HEAD OF DEPARTMET
PROFESSOR



DR SANTHI NATARAJAN
ASSOCIATE PROFESSOR



DR. ANUPAMA H S
ASSOCIATE PROFESSOR



DR VISHWA KIRAN S
ASSISTANT PROFESSOR

NON-TEACHING STAFF



MANU K V



SRI. HARINATH H S
ASSISTANT INSTRUCTOR

COVID -19



'20
20

We've always been taught that 'Health is Wealth' and this year stood as a testimony to the above saying. The coronavirus family causes illness ranging from common cold to severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS). The new coronavirus, the seventh known to affect humans, has been named **COVID-19**.

Common signs of infection include fever, coughing and breathing difficulties. In severe cases, it can cause pneumonia, multiple organ failure and death. The incubation period of COVID-19 is thought to be between one and 14 days. It is contagious before symptoms appear, which is why so many people get infected. Infected patients can be also asymptomatic, meaning they do not display any symptoms despite having the virus in their systems.

China alerted the WHO to cases of unusual pneumonia in Wuhan on December 31. COVID-19 is thought to have originated in a seafood market where wildlife was sold illegally. On February 7, Chinese researchers said the virus could have spread from an infected animal to humans through illegally trafficked pangolins, prized in Asia for food and medicine. Scientists have pointed to either bats or snakes as possible sources.

The WHO declared the virus a pandemic on March 11 and said it was “deeply concerned by the alarming levels of spread and severity” of the outbreak. The WHO recommends basic hygiene such as regularly washing hands with soap and water, and covering your mouth with your elbow when sneezing or coughing. Maintain “physical distancing” – keeping at least 1 meter (three feet) between yourself and others – particularly if they are coughing and sneezing, and avoid touching your face, eyes and mouth with unwashed hands. Avoid unnecessary, unprotected contact with animals and be sure to thoroughly wash hands after contact.



INDUCTION PROGRAMME 2

Unlike the previous scheme, The induction programme is split into two halves for the students to completely mingle with each other. Following the enlightening counterpart, the second part of the Induction program was filled with interesting activities and talks that the students and faculty enjoyed as one department,



EVENTS IN THE DEPARTMENT

Department of AIML has organized an expert talk by Mrs Chethana Srinivasan, counselor of BMSIT&M to give a talk on Universal Human Values to motivate the students.



Awareness Talk on Prevention and Precautionary Measures on Novel Corona by Dept. of AI&ML



EVENTS IN THE DEPARTMENT

OPEN COURSES

Department of AIML has conducted an Online Open Course titled “RTOS: Real Time Operating Systems” from 16th June 2020 to 20th June 2020, which was organised and coordinated by Dr. Vishwa Kiran , Assistant professor, AIML.

VALUE ADDED PROGRAMME (VAP)

The faculty hosted a Value Added Programme conducted as a 25 Hour course in the month of July. This course was on the fundamentals of Artificial Intelligence for students of the department as a bridge course to enable them to venture into new and unknown territories.

CO-CURRICULAR ACTIVITIES

Faculties of Department of AIML, conducted Group Discussion on the topics of latest technology on April 17th, 2020 as a club activity.

Dr Anupama H S, Associate Professor, Department of AIML, conducted poster presentation for proctoring students on April 3rd, 2020 as a club activity.

Dr. Santhi Natarajan, Associate Professor, Department of AIML, mentoring 4 projects which have been selected for the third round of competitions in Anveshna 3.0



EVENTS IN THE DEPARTMENT

ANIVERSARY VIDEO

Unvield by the BoG and then Posted onto instagram in the br.ai.nium forum, here's a trip down memory lane. Short yet filled with all the achievements of our newly formed department in the first year they have been functional.



FACULTY ACHIEVEMENTS

- **Dr. Bharathi M A** was a BOE member for MSRIT on 22/5/2020.
- **Dr. Bharathi M A** received a Bronze medal from Alison Microsoft on 27/5/2020.
- **Dr. Santhi Natarajan** has been invited to be part of the curriculum committee for the newly launched MTech Course on Artificial Intelligence by the APJ Abdul Kalam Technological University, Kerala.
- **Dr Anupama H S** has received certificate of achievement after successfully completing the assessment after participating in the webinar on the topic "Placement New Attacks, Function-based Attacks and Graph HMAC", on 10-6-2020, organised by K-Tech CoE for Cyber Security.(Online).
- **DR. Bharathi M A** received a Bronze medal from Alison Microsoft on 27/5/2020.
- **DR. Bharathi M A** and **Dr. Santhi Natarajan**, were reviewers for IEEE CONECCT 2020 and IEEE B-HTC 2020.
- **Dr. Santhi Natarajan** was invited as a Session Chair in the 2nd INTERNATIONAL CONFERENCE ON ADVANCES IN COMPUTING & INFORMATION TECHNOLOGY (IACIT - 2020) - Virtual Conference held on 29 th and 30 th April 2020.
- **DR. Bharathi Malakreddy A** has been invited as speaker for "Ten Days online Faculty Development Program" organized by KLE Society Basavaprabhu Kore, BCA College, Chikkodi. Delivered a talk on "IoT- Locking of Devices by Unlocking Internet", 11-6-2020.
- **Dr. Bharathi Malakreddy A** has been Invited as speaker to 3 Day Webinar Series on "Emerging and Transformative Technologies Post Pandemic Era" organized by Sharnbasva University, Kalburgi. Delivered a talk on "Artificial Intelligence and IoT - A COVID 19 Perspective", on 29-6-2020.



FACULTY ACHIEVEMENTS

- **Dr. Santhi Natarajan** has been invited as speaker for "Ten Days online Faculty Development Program" organized by KLE Society Basavaprabhu Kore, BCA College, Chikkodi. Delivered a talk on "Applications of Artificial Intelligence", 9-6-2020.
- **Dr. Santhi Natarajan** has been Invited as speaker to 3 Day Webinar Series on "Emerging and Transformative Technologies Post Pandemic Era" organized by Sharnbasva University, Kalburgi. Delivered a talk on "Empowering Precision Medicine with AI", on 26-6-2020.
- **Dr. Santhi Natarajan** Invited speaker for session on "Executive introduction to ML mathematical models" for Simpragma Technologies, 18-6-2020.
- **Dr. Vishwa Kiran S** has delivered a talk on "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 on 11/1/2020.
- **Dr. Vishwa Kiran S** has delivered a keynote talk on "Multiprogramming vs Multi Tasking vs Multiprocessing vs Multithreading" as part of two weeks workshop sponsored by AICTE at Don Bosco Institute of Technology on 21/2/2020
- **Dr. Bharathi Malakreddy A & Dr. Santhi Natarajan** are part of the Simpragma Solutions Recruitment Board, as Subject Matter Experts.
- **Dr. Bharathi Malakreddy A & Dr. Santhi Natarajan** were speakers in the webinar series hosted by APPA Institute of Engineering & Technology on Emerging and Transformative Technologies-Post Pandemic Era on 28-06-2020
- **Dr. Bharathi Malakreddy A** was invited to speak for the teacher development series hosted by KLE Society's Basavaprabhu Kore College of Computer Applications (BCA) Chikodi on 11-06-2020



FACULTY PUBLICATIONS

- An Accelerated Approach to Parallel Ensemble Techniques Targeting Healthcare and Environmental Applications by Tejasri Kari, Leelavani N, Sayeera Banu A, DhanuShree R, Jagannatha K.B, **Santhi Natarajan**
- AI-NAAV: An AI enabled Neurocognition Aware Autonomous Vehicle Won Best Paper Award by **Santhi Natarajan**, Sanketh S Jain, Nida Mariam S A, M K Sai Ramya, Chaithanya G J and **Bharathi Malakreddy A**
- Sylvian-Silva (SFORCE): An Ensembled Boost Approach Towards Machine Learning by Anand Ravishankar, **Dr. Santhi Natarajan** and **Dr. Bharathi Malakreddy A**
- AI-VIDHAAN: An AI Empowered Precision Nutrition Platform by **Santhi Natarajan** and S. P. Prashanth Kumar Reddy
- Intelligent FORecasting Model for Climate Variations (InFORM): An Urban Climate Case Study by Pralhad P Teggi, **Santhi Natarajan**, **Bharathi Malakreddy A**
- DGTD modeling of Mie scattering phenomenon of gold nano particles for biosensing applications by Divya Shree S, **Bharathi Malakreddy A**



RESEARCH & FUNDING

Funded project from VGST, Govt of Karnataka, towards establishment of Centre of Excellence in AI towards Healthcare Applications.

- **DigitOnco:** Development of computational pipelines, combining principles of radiogenomics, AI and Machine Learning based algorithm architecture codesign and reconfigurable computing. NDA signed with a leading global cancer research team, Health Care Global (HCG)
- **AI_NAAV:** Development of sensor fusion algorithms and accelerated ADAS pipeline for Autonomous Vehicles. NDA signed with Aleka Technologies towards design, development and deployment of prototypes
- **NLP Library Development:** Development of native language libraries for automatic and accurate generation of language constructs in native languages. NDA signed with SimPragma Solutions Pvt Ltd.
- **AI_VIDHAAN:** AI assisted precision nutrition and dietetics platform
- **AI_MANN:** AI assisted quantitative psychosociometric analysis and meta cognitive assessment for social, personal and team behaviour.
- **InFORM:** Intelligent weather FORcasting Model for Climate Variations and Geoscientific analytics.
- **URVoice:** Vocalizer for the speech and hearing impaired



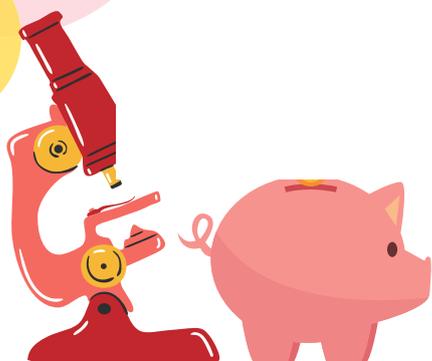
RESEARCH & FUNDING

- **Dr. Bharathi M A** was involved in the collaborative research with ALEKA Technologies, NITK Suratkal.
- **Dr. Santhi Natarajan** was involved in the collaborative research with ALEKA Technologies, NITK Suratkal.
- **Dr. Bharathi M A** and **Dr. Santhi Natarajan** were involved in the Launch of R&D product, Shudh: Automatic Sanitizer Dispenser, an indigenous product developed jointly by Aleka Technologies, HK Groups.
- **Dr. Bharathi Malakreddy A** and **Dr. Santhi Natarajan** were involved in Design and development of three prototypes for Shudh in collaboration with industry partners.
- **Dr. Bharathi Malakreddy A** and **Dr. Santhi Natarajan** were involved in guidance, mentoring of 01 Major Project and Project evaluation panel member for final year students of CSE department, NIT Suratkal.
- **Dr. Bharathi Malakreddy A** and **Dr. Santhi Natarajan** were involved in guidance, mentoring of 02 Minor Projects and Project evaluation panel member for minor project students of CSE department, NIT Suratkal.



RESEARCH & DEPLOYMENT

Department of AI & ML BMSIT & M, in association with the lead NDA partners Aleka Technologies and HK Groups, proudly present "SHUDH", the automatic sanitizer dispenser. SHUDH has been launched as an indigenous prototype, an outcome of the ongoing research activity from the department. This research offering is a humble attempt to tackle the unprecedented threat of the COVID 19 pandemic that the world is currently facing. The product is multipurpose, wherein it can be used as an automatic dispenser for soap solutions, water, sanitizer etc. We aim to launch this product as a solution for contactless community presence and social distancing, which has become the way of life. This product is a definite value add in many social environments like health care facilities, public sector offerings like banks and companies, laboratories, research facilities, academic centres, places of public/private gathering, assembly houses, factories, production centres, houses and the like. While there are similar products available in the market trying to capitalize on the public requirement of such automatic dispensers, they come with a heavy price tag. We envisage SHUDH to be a product that is accepted and affordable, so that the society marches towards a hazard-free post pandemic timeline.



STUDENT ACHIEVEMENTS

INTERNSHIPS :

"Solve Small, Dent Big"

Hello! Firstly, all of you stay home and stay safe. In February, I had interned at Reap Benefit, an NGO that helps solve local civic and environmental issues with the youth. It has been an amazing four-year journey with Reap Benefit. As a mentee and a member of this problem-solving community, I train

other young students as a ninja mentor. It was a one-month internship as a ninja mentor. I got to learn a lot of things from all my mentees and my fellow ninja mentors. It was a month of working with young students who wanted to make their community a better place by becoming the change-makers. It was just amazing being able to help them out on their journey. This internship taught me the moral values of life that my curriculum did not offer. It was fascinating to see how each of us can make small changes to our surroundings and make a big difference together. The methodology of problem-solving in Reap Benefit can be applied not only for solving civic or environmental issues but for any problem you face and their motto "Solve Small Dent Big" is something that I'll always remember.



- JONATHAN CLYDE D'SILVA



International Model United Nations

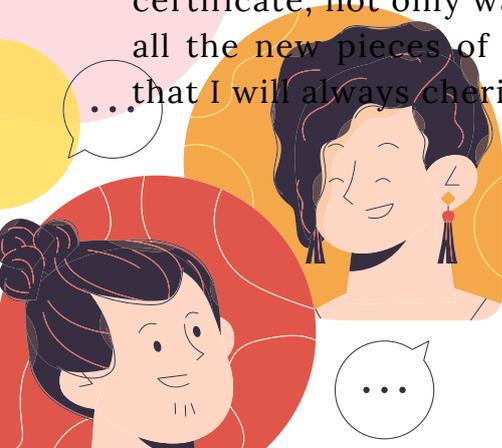
An internship is a hands-on way to learn new skills at a company or an organization as opposed to a classroom environment. Internships are a great opportunity for college students to get hands-on experience in the career they want to pursue or in the domains of their interests. This summer I wanted to explore the potential of my knowledge and creativity in various stomping grounds. One of the realms I picked was creative communication, sharing new ideas, and carrying discussions forward to the next level of envisage. Perusing through a lot of



internship opportunities I found an organization which I thought was an ideal fit, this was the International Model United Nations and so I fired off an application. A week after I sent my application, I got a call back from them saying they would gladly hire me for a campus ambassadors' internship. I was ecstatic to part in this completely foreign experience. As an intern, I was asked to spread a word about the IMUN conferences and help people to find their interests, and encourage them to share their ideas. We were tasked to flood social media with the news. It was very fascinating to see such engaging topics and concepts for the conference. Every week we had a different theme. I put up everything onto my social media platforms and shared it with my kith and kin. I was overwhelmed to hear so many people responding. I had reconnected with a lot of my childhood friends and felt ecstatic. Not only did I help people connect with peers having similar viewpoints and areas of interest but I also made new acquaintances.

On a whole, it was an amazing experience which I thoroughly enjoyed. The fact that I savoured my work, meant it never felt like a burden nor was I exhausted from it. The new themes, different people kept me going. I had worked for a month after which I was awarded the certificate of completion by the Australian embassy (IMUN organization collaboration). Looking at this certificate, not only was I proud of my accomplishments but it reminded me of all the new pieces of knowledge I learnt, every new interaction and memory that I will always cherish.

- SHREEYA GUTHIKONDA



SOCIAL WORK



Helping panda

Helping Panda LLP is a startup co-founded by Students of the AI&ML department (**Arun Josephraj, Shreyas Sreenivas & Sadanand Venkataraman**) and CSE Department. As their name suggests, they are a service which promises to help reach the monetary goals required to fulfill specific causes, either by NGOs or Individuals.

Their selling point, which they seem to be very proud of is the fact that you can set-up campaigns that offer them **0% commission** whereas their competitors take a commission of around 5% to 8% per campaign.

Our HoD has set-up her own campaign that is going live on the 26th of October this year, to provide relief to the families of martyrs, so keep an eye on that!

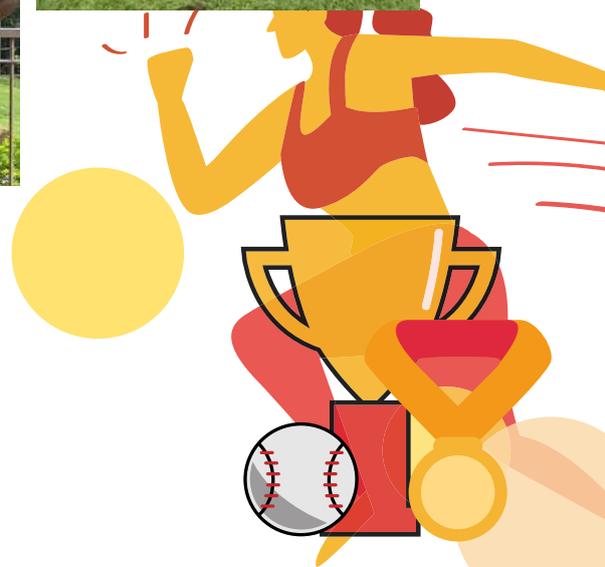
You can reach out to them through their website by [clicking here](#) and setup your own campaign as a campaigner or help another reach their goal.

SPORTS

Jonathan took part in the monthly golf tournament in Pilikula Golf Club, Mangalore and was the second runner up with a net stroke of level par.

(Level par = 0)

“Golf is a compromise between what your ego wants you to do, what experience tells you to do, and what your nerves let you do.”



COURSERA ACHIEVEMENTS

Abhishek G	<ul style="list-style-type: none"> Python
Aditi N	<ul style="list-style-type: none"> Python- fundamentals and data structures
Arun Joseph	<ul style="list-style-type: none"> HTML, CSS, and JavaScript for Web Developers Create your first chatbot with rasa Python - fundamentals, data structure
Darshan C B	<ul style="list-style-type: none"> Python Introduction to Data Science with python
Diya	<ul style="list-style-type: none"> Data mining Python Fundamentals and data structures
Diya	<ul style="list-style-type: none"> Canva for social media
Ganesh A H	<ul style="list-style-type: none"> Python Fundamental, Data structures Trading algorithms Understanding Financial markets Python and Statistics for financial markets Introduction to HTML5 Java Programming
Gowtham S	<ul style="list-style-type: none"> Python - fundamentals, data structure Machine Learning for All Data Pre-processing and Feature Engineering Exploratory Data Analysis with MATLAB
Hiteshee Pal	<ul style="list-style-type: none"> Consumer Behavior Python - fundamentals, data structure
Janavi	<ul style="list-style-type: none"> Python - fundamentals, data structure
Jonathan	<ul style="list-style-type: none"> Python
Sasi Kiran Reddy	<ul style="list-style-type: none"> C++
Sadanand	<ul style="list-style-type: none"> Data Modeling and Regression Analysis in Business Marketing in a Digital World Developing AI Applications on Azure Use Canva to Create Social Media Marketing Introduction to Web Development Predictive Analytics and Data Mining



RESULTS 2019 - 20



ARTICLES

Lockdown Dairies

Lockdown is a whole new experience for most of us. So, I would like to share some of my experiences with you all. Our college has done us a great help by giving us free access to online courses from Coursera. I utilized this opportunity to enroll in a couple of online lectures, “AI for Everyone” being the first one was a non-technical

course, which helped me to understand AI technologies and spot opportunities to apply AI to problems in our organization. Overall, it was an excellent course. The second course I had taken up was on “Number theory and Cryptography”. Number theory is a classical discipline in mathematics which deals with the study of relations among the integers. On the other hand, Cryptography is the art of secretly transmitting the information. These two courses have helped me acquire knowledge and develop skills in fields besides my curriculum. I also took up an online course to learn Korean, which happens to be one of the hardest languages to learn. Through this course, I learned the basics of the language which on the bright side helped me watch Korean sitcoms and also might be of help in the future.



- NAGAABHISHEKHA RAMADURGAM



ARTICLES

Artificial Intelligence and Internet of Things – A Perfect Match

Computing mainly automates things for you, but when we connect all these things, you can truly start assisting people in a more meaningful way. If I go and pick up my kids, it would be good for my car to be aware that my kids have entered the car and change the music to something that’s appropriate for them.

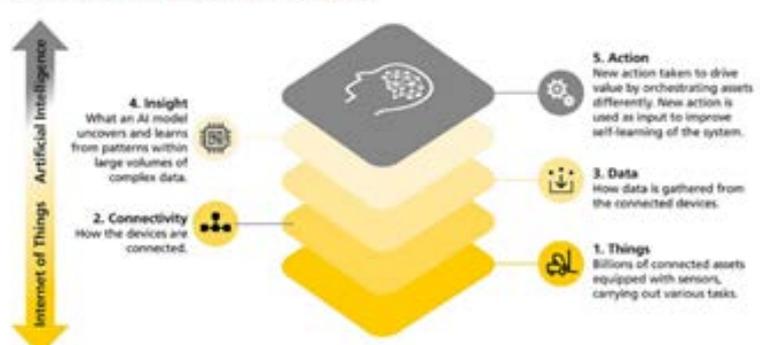
– Sundar Pichai, CEO of Google

The Internet of Things or IoT can be defined as a network of physical objects that use embedded sensors, actuators and other devices that can collect or transmit information about the objects. According to a report from Gartner, by the end of 2020, the number of existing connected devices is expected to rise to over 25 billion. In other words, there will be more than three things connected to the internet for each person on the planet.

The use of smart devices goes beyond having your alarm clock or phone notifying the coffee machine to start brewing coffee for you. If you’re wondering what role artificial intelligence plays in all this, remember that AI excels at identifying patterns and using them to make predictions. All the data that is being collected by smart devices can be analysed with the help of machine learning models that can afterwards learn to adjust the behavior of IoTs. Artificial intelligence and Internet of Things are the perfect mix. Together they have created a new concept called the artificial intelligence of things or AIoT. The purpose of AIoT is to improve human-machine interactions and enhance data management and analytics. Adding artificial intelligence capabilities to Internet of Things will clearly facilitate a better analysis and decision-making progress. Even though the Artificial Intelligence of Things is a relatively new concept, the combination of AI and IoT brings a whole new range of possibilities. At the same time, technology companies are really open to the idea of leveraging the benefits of AI to add value to IoT systems.

AI technology, more specifically machine learning, is able to automatically identify patterns and detect anomalies in the data that smart sensors and devices collect. Machine learning approaches can make operational predictions up to 20 times faster and with greater accuracy than traditional business intelligence tools. AI applications for IoT systems can also enable companies to avoid unplanned downtime, increase operating efficiency, spawn new products and services, and enhance risk management.

AI IN THE INTERNET OF THINGS



- COURTESY OF DR. BHARATHI MALAKREDDY A



ARTICLES

TESLA'S SELF-DRIVING CARS :

A good example of AI's use in IoT is self-driving cars by Tesla Motors. In this case, the cars are considered the "things" and they use the power of AI and machine learning to predict the behaviour of cars and pedestrians in different circumstances. Furthermore, according to Tesla's CEO Elon Musk, all Tesla cars operate as a network and when one car learns something, they all learn it. In 2018, during an event, Musk stated that the company's autopilot service is constantly learning and improving thanks to machine learning algorithms, the car's wireless connection, and detailed mapping and sensor data that Tesla collects.

- COURTESY OF DR. BHARATHI MALAKREDDY A

A CRUEL COVID19 IRONY

Never have I seen such a mess in life.
The air is pure but wearing a mask is mandatory.

Roads are empty but it is impossible to go on long drive.
People have clean hands but there is a ban on shaking hands.

Friends have time to sit together but they cannot get together.
The cook inside you is crazy, but you cannot call anyone to lunch or dinner.

Every sunday, the heart longs to go out,
but the weekend does not seem to end.

Those who have money have no way to spend it.
Those who don't have money have no way to earn it.

There is enough time on hand but you can't fulfil your dreams.
The culprit is all around but cannot be seen.

There are classrooms and Labs but no students
The campus is silent no colorful hues of young hearts

Just taught me to get my hands somewhere that's not a keyboard

A world full of irony!
Be positive but test negative

- WRITTEN BY DR. BHARATHI MALAKREDDY A



ARTICLES

THE EPIC JOURNEY



The Dawn Of Opportunity!

The year was born! An Epic year in the history of modern science and mankind! Everyone welcomed another canto, to be filled with rich and colourful chapters to life. An opportunity to undo mistakes, recreate success, keep forgotten promises and love more!

The Dance of Solitude!

Being alone in crowd, singing alone in a chorus, became the new norm. The novel SARS-CoV2 taught us the dance of solitude, leaving us unarmed! It self-bestowed on it, the crown of "Untamed"! Sweeping across, the wave gripped so tight, that millions across world weren't sufficient to establish its glory.



The Dreams of Future!

Mankind and science faced the ultimate challenge. The future seemed tainted. Our frontline warriors started waging an exemplary war, truly unprecedented. Mankind saw Creator in different forms and ethnicity. Indeed, a true redemption from the unruly wars fought in past! Once again, togetherness in distancing proved that dreams of future can be colourful more than ever!

The Lantern of Hope!

Another quarter to year end, science has lit the lantern of hope across the world, with promising medical aids to get rid of the menace. Vaccines, human trials and success stories have rebuilt hope in minds of the confused and bewildered lot. An answer to many unspoken apprehensions, we start to see light at the end of the tunnel!



The Jump of Joy!

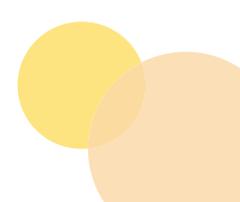
Amidst opportunities lost, happiness deprived, parting with the comfortable past, the world started witnessing a new pulse of growth. It was calmness in chaos derived, thanks to our perseverance, we started gaining a new momentum to find new pathways in the lost world. The baby steps are now maturing to a toddler's jump of joy. A sense of relief felt, when new attempts, business, friendships and ways of life started bearing fruits of success.

The Monuments of Success!

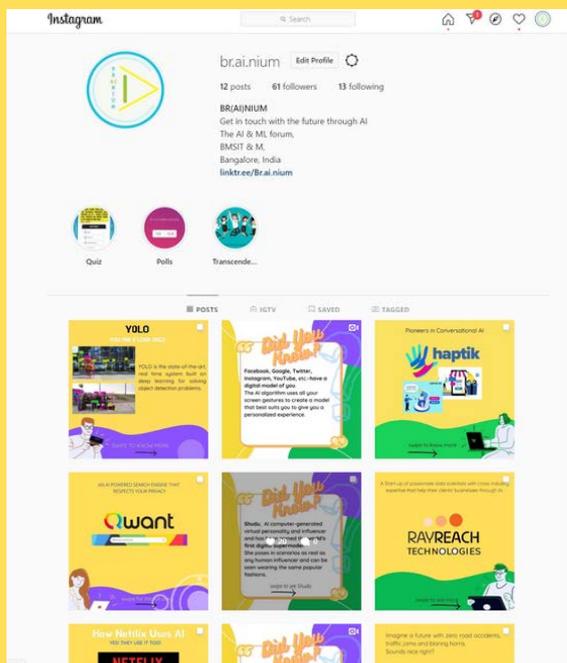
Witnessing this metamorphosis has been the greatest experience that 2020 has offered us. A towering greatness is a lot of small things done the right way. Behind every success, there are stories of hardships, failures, revivals, newfound friendships, wars and uncertainty. We are just a few steps and days away from building yet another monument of success. Come, let us join together to end this epic journey of 2020, to be the creators of a new world for our brethren in 2021, with new ideas and dreams!



- WRITTEN BY DR. SANTHI NATARAJAN
WITH PICTURE COURTESY TO NANDHINI RAMACHANDRAN



BRAINIUM'S INSTAGRAM BLOG



Why is Brainium on Instagram ?

According to statistics, 60% of the users on Instagram belong to the age group of 14 - 23 years while most of them have a daily average activity of about an hour this makes Instagram the right social media platform to spread knowledge on AI among youngsters.

What does Brainium do on Instagram?

We post content on -

- Successful AI startups
- Emerging technologies and algorithms in AI
- Trivia on AI
- Also feature projects on AI done by the department students/seniors

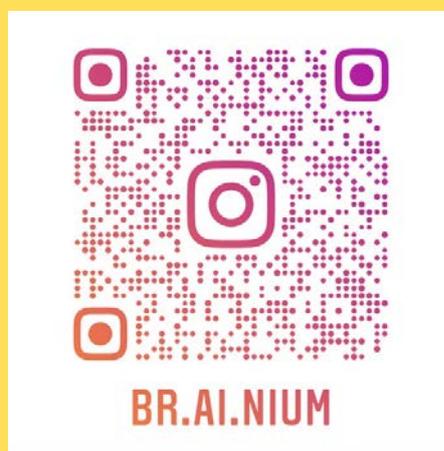
How is Brainium different compared to the other educational forums on Instagram ?

We provide links to all our posts in case if the viewer isn't satisfied with the information on the blog . We host weekly quizzes and polls and back the users with correct facts to the questions .

Who manages the Instagram Page ?

We are a team of six and we call ourselves "THE IG TEAM". **Ananya** and **Gowtham** take care of designing while **Aditi**, **Diya**, **Sudhanva** and **Tejasvi** are the curators. **Gowtham** edits and uploads the articles and ensures there is a smooth flow.

Follow us on Instagram @br.ai.nium or just scan the QR Code on the right to find us !



STUDENT SUBMISSIONS



*Shreeya's
work*



*Gowtham's
work*



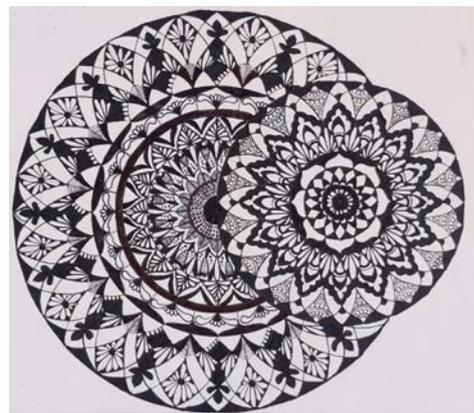
STUDENT SUBMISSIONS



Diya's work



Ananya's work



STUDENT SUBMISSIONS



*Janavi's
Work*



*Sanjeevini's
Work*



TALKING WITH ARUN & SADANAND

TALKING is a podcast started by **Arun Joseph and Sadanand Venkatraman** of the AI&ML department. The podcast started as a hobby, available to you on all major podcast platforms (**Spotify, google podcasts, apple podcasts included**)

They discuss science, tech, movies, astronomy, and occasionally rant about football.

It's everything you would expect two college students to talk about. They give shout-outs to local businesses, not for sponsorships but because they feel they're worthy of it. New episodes premiere every **fortnight**.



APP OF THE VOLUME



Aarogya Setu - The world is not back to normal but sometimes we tend to forget the seriousness of the situation we are in. The aarogya Setu app has all the information you need on your fingertips, not to mention it is **mandatory** to gain entry into public buildings such as malls.

GAME OF THE VOLUME

Among us - a game which anyone and everyone can enjoy. You can play Among your friends or try your luck with the rest of the world where you show off the Sherlock Holmes or the Jack the Ripper in you



FUN SECTION

Sudoku Easy

	3			1			6	
7	5			3			4	8
		6	9	8	4	3		
		3				8		
9	1	2				6	7	4
		4				5		
		1	6	7	5	2		
6	8			9			1	5
	9			4			3	

Sudoku Hard

1		8	5					
			2			4		1
	3		6				2	
9					4			
			1				9	
				8	9	3		2
						8		
6								
		2	9	1				5



CALENDER OF EVENTS

BMS Institute of Technology & Management Avalahalli, Yelhanka, Bangalore - 560064											
DEPT. OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING											
Calender of Events 2020-21 (Odd Semester)											
Month	Week	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Working Days	Events	Holidays
September	1		1	2	3	4	5	6	5	1st September : Academic Year 2020-21 Begins: III Sem classes Started	
	2	7	8	9	10	11	12	13	6	10th Sept: PBL: Group Formation	
	3	14	15	16	17	18	19	20	5		17th Sept: Mahalaya Amayase Holiday
	4	21	22	23	24	25	26	27	6	21st Sept: PBL Guide Allotment , 21st Sept:FIMS Update 26th Sept: Technical Talk	
	5	28	29	30					5	30th Sept:PBL Synopsis Submission	
October	5				1	2	3	4	5		2nd October: Gandhi jyanthi Holoday
	6	5	6	7	8	9	10	11	6	5-7th Oct: IA-1 (III Sem Students) 10th Oct: Coding Activity	
	7	12	13	14	15	16	17	18	6	14th: SMS Dispatch, 16th - 17th: Faculty Student Feedback 1, 17th: PTA for Higher Semester.	
	8	19	20	21	22	23	24	25	6	20 Oct: FIMS Update 24th Oct: Expert Talk 1	
	9	26	27	28	29	30	31		3	27-28 Oct.: FYP/PBL Patentability Review - 1	26th: Vijaydashami, 30th Oct: Eid Millad, 31st Oct: Valmiki jyanthi
November	9							1			1st Nov:Kannada Rajyotsava
	10	2	3	4	5	6	7	8	6	5-7 Nov.:Internal Assessment (IA) Test - 2	
	11	9	10	11	12	13	14	15	6	14-Nov.: SMS Dispatch for IA-2, 14-Nov.: Tech-Transform 2020 Notification 14th Nov: Industrial Visit	
	12	16	17	18	19	20	21	22	4	16-17 Nov.: Students Feedback - 2 on Faculty , 20-Nov.: PBL Patentability Review - 2/BMSIT Open Day 20-Nov.: FIMS Update	16 Nov: Balipadyami, 21st Nov: Tech Transform
	13	23	24	25	26	27	28	29	6	27-28 Nov.: FYP Patentability Review-2 28th Nov: Expert Talk 2	
	14	30							5		
December	14	1	2	3	4	5	6		5	5th Dec: OBE Activity	3rd Dec: kanakadasa Jayanthi
	15	7	8	9	10	11	12	13	6	7-9 Dec.: Internal Assessment (IA) Test -3	
	16	14	15	16	17	18	19	20	4	16-Dec.: SMS Dispatch for IA-3 17-Dec.: Last Working Day for 3rd semester students	
	17	21	22	23	24	25	26	27		21-Dec.: FIMS Update	25th Dec: Christmas
	18	28	29	30	31						
Total Number of Working Days									85		
B. E 3rd Semester: IA1: 5th Oct to 7th Oct 2020 B.E 3rd Semester : IA2: 5th Nov to 7th Nov B.E 3rd Semester: IA3: 7th Dec to 9th Dec										Practical Examinations: 3rd Semester: 21.12.2020 to 31.12.2020	Commencement of Even Semester : 8th Feb 2021
										Theory Examinations: Semester End Examination: 3rd Semester : 4-1.2021 to 23.1.2021	

Student Centric Activity - Technical Talk/Seminar/Workshop/Quiz/HANDS-ON Session on Blended Learning (OBE Related activities) to be organized in respective departments.

H.O.D

