









### C L SSAL

#### INSIDE THE ISSUE



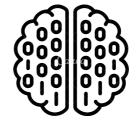
ALL ABOUT ROBOTICS



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Αl



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# ABOUT THE DEPARTMENT



The Department of Computational Intelligence is an educational milieu that creates a foreground for students to acquire knowledge in the futuristic thrust areas of Artificial Intelligence, Machine Learning and Software Engineering. The department desire is to stay ahead of the curve and at par with the everchanging needs and demands of the software industry.

# **NOISI**

To build an illustrious academic platform in Computational Intelligence by providing unique learning and research experiences to meet the standards of industries and world-class universities. Our diverse program curriculum is focused on equipping the students with expert faculty and industry professionals with a foundation for knowledge, global competencies, excellence in designing and developing.

- To create, acquire and disseminate engineering knowledge on Computational Intelligence thereby transforming students into professionals to by imparting knowledge on Mathematics, Computing Sciences, Artificial Intelligence, Software Engineering and Cognitive Computing.
- To create, acquire and disseminate engineering knowledge on Computational Intelligence thereby transforming students into professionals to by imparting knowledge on Mathematics, Computing Sciences, Artificial Intelligence, Software Engineering and Cognitive Computing.
- M3 To encourage innovative Research and Development in Computational Intelligence and interdisciplinary areas by collaborating with renowned academic institutions and industries.
- To produce accomplished graduates with a potential to lead revolutionary developments in Computational Intelligence based systems along with a commitment to ethical responsibilities and lifelong learning.

#### **EDITIOR VOICE**



**Dear Readers!** 

Greetings to All.

With almost an year of Academic Excellence, the Department of Computational Intelligence has always strived to give the students the right intellect and right values. The Department is a hub, always dynamic with versatility that range from academics to research, sports to literary activities throughout the year.

The Colossal, The Department Newsletter reflects our dynamism and brings in a glimpse of our proud moments - our accolades, innovations, awards, achievements, our contribution to research and the society, philanthropy etc. during the previous Quarter of the year.

We exhort our students in becoming the ambassadors of our excellence and diversity. These moments will definitely be cherished as memories in the chronicles of Cintel's history.

We, the members of the Editorial Board thank the management and the administry for bestowing this responsibility of compiling and editing the Newsletter on us. We are thankful and appreciate the constructive contribution of all the faculty members and students in bringing out this newsletter-Colossal. We look forward for your suggestions to enrich the quality of Colossal.

"Our greatest glory is not in never falling, but in rising every time we fall"

"All our dreams can come true, if we have the courage to pursue them" - Johann Wolfgang von Goethe

Rest your wings on the branch of Colossal

B. Amutha SCO-Newsletter –Head Third Quarter (Apr-Jun) for the AY 2022-23 Volume – I, Issue – IV

#### **Message from Vice Chancellor**



#### Prof. C. MUTHAMIZHCHELVAN Vice Chancellor, SRMIST

It gives me immense pleasure to pen a note for the School of Computing's department newsletter.

It is undoubtedly a perfect medium to cater to expressions, challenges, peer-to-peer influences, and many other activities executed at the department level. And when it comes from the School which houses today's trending technologies, it paves the way for a basket full of opportunities. The last three editions from all the four departments have considerably showcased their strengths and applicated aftermpts of both students and faculty members in many initiatives and research, which signifies that the team is gearing up towards an ambitious path.

Ever since the inception of SRM Engineering College in 1985, we have meticulously extended our services with utmost dedication and diligence. Therefore, as a result our institution has become one of the leading higher educational institutions in the country. This year's NIRF 2022 (National Institutional Ranking Framework, MoE) ranking is one such great achievement, where all the hard work and systematic team efforts have led us to the new heights of success.

In line with the National Education Policy 2020, I strongly feel that this is the time for us to reflect, modify, consolidate and reset our benchmarks so that we remain competitive as well as yet be mindful of being good human beings. Let us be meticulous in our pursuits and aim at excellence for self and the institution. Keeping an open mind, inviting fresh ideas, setting the direction and pacing to reach the next milestone of iconic excellence in the changing education space should be our aim. Let us unfold our vision for the institution and instil the desire to do better than yesterday. I wish the entire team to continue their good efforts in creating awareness, sharing their success stories to others.

Prof. C. Muthamizh chelvan

VICE CHANCELLOR SRM Institute of Science and Technology SRM Nagar, Kattankulathur - 603203 Chengalpattu Dist, Tamilnadu, India.

SRM Nagar, Kattankulathur — 603 203, Chengalpatta District, Tamil Nadu, India. 2 +91-44-27455765, || +91-9940035004 ■ vc@srmist.edu.in

#### **Message from Registrar**



#### Prof. S. PONNUSAMY Registrar, SRMIST

"Winners are not those who never fail but those who never quit". ---- Dr.APJ Abdul Kalam

SRMIST ceaselessly strives to ensure that its students become its ambassadors once they graduate, spreading knowledge, wisdom, fair play, morality, integrity and above all love, thus making the world a better place to live in. Being the best indicates providing outstanding education quality, underpinned by sound pedagogical principles and practices, industry research collaborations, national and international engagements, with practical and relevant education to students, so that we make every student shine in the industry relevant to them.

We truly believe in the provision of quality education. Emphasis is given to improve skills of learning and wholesome personality development. In this regard, SRMIST aims to provide its employees and students with appropriate training, learning opportunities, and create an environment that fosters their development.

SRMIST has readily adapted to the global demands and has spontaneously geared up to meet the global challenges by harnessing the latest technologies in education and research fronts. The School of Computing has been introducing many interesting specialization programmes and elective courses, which are in line with the trending technologies, with a view of supporting the possible cross discipline education and research. This is the need of the hour, where the world is running in the digital era. The School has indeed been in stride of upgrading its infrastructure to meet the industry needs. The move towards interdisciplinary studies, research based and interactive learning with technology integration have opened up several options as well as has created multiple challenges and opportunities towards innovation.

Our collective resilience yields powerful evidence of our progress in achieving the ambitious goals of Graduation for our budding professionals. The journey does not end here... for in the years to come, as we traverse the extra mile, we endeavour to make SRM a global reference in the academia and the industry. Let us continue this momentum to scale up further, though the competition is tougher and tighter as we move up.

Hearty congratulations to the newsletter team from School of Computing for showcasing what we have achieved in recent times. My Best Wishes to all!

#### **Message from Dean**



We are truly a vibrant community where aspiring students prepare themselves to be responsible leaders and lifelong learners through rigorous engineering education. With students in India seeking more interdisciplinary programs and flexibility in course curriculum, SRM IST provides a holistic learning environment and ample opportunities for leadership by developing their skill sets required for their career growth. Our strong connections with alumni industry and international

institutes ensure that there is no latency between the industry expectations and the curriculum offering, making education and research at SRM the best in the league. The year has had a great leap in leveraging the funding opportunities from Government of India, international institutes and industries to set up latest technology equipped laboratories and courses on emerging technologies. One such, for us to be delightedly proud is to have funds sanctioned under the Promotion of University Research and Scientific Excellence (PURSE) Scheme, DST with a total outlay of Rs. 14 Crores for developing electric mobility infrastructure and supporting networks. The PURSE project is very rarely sanctioned for the private universities and institutions.

We have initiated the students' counseling cell, department wise. The motto is to suggest and make the students understand and realize the necessary tips needed for their well-being, which will emWe are truly a vibrant community where aspiring students prepare themselves to be responsible leaders and lifelong learners through rigorous engineering education. With students in India seeking more interdisciplinary programs and flexibility in course curriculum, SRM IST provides a holistic learning environment and ample opportunities for leadership by developing their skill sets required for their career growth. power them with life skills needed to face the challenges in this dynamic world. The cell will dedicatedly motivate the students to identify their inner strength for their holistic development.

As I look back at a very successful year, I cannot help but beam with pride at the hard work and fantastic learning taking place every single day. The newsletters from the School of Computing have successfully done their best in providing the jist of departmental activities quarterly. I am honoured to be part of a team of people who are committed, compassionate and keep SRM flag flying high.

It's time now for me to wish you all a very productive academic year ahead with promises that are to be an even more action-packed.

All the best!

---- Prof. T. V. GOPAL Ph.D

Dean

#### **Message from Chairperson**



Warm Greetings!

We have successfully stepped into the new academic year, after a year of blended expected and unexpected experiences. The year that started with the enormous challenge of online teaching and learning, saw its gradual transformation to physical mode of education. This time our school has had a visionary focus towards many initiatives in introducing the emerging technologies to our students.

Industry supported courses in Augmented and Virtual Reality technologies, Distributed Computing, Data Science, Full stack, Information visualization were offered as professional electives to the undergraduate students across the school. Integrated post-graduation courses were rolled in Cyber Security and Data Science domains.

We are proud to see our students this year being placed in top notch companies, with a remarkable placement record of 97.58% despite the global situation. While some students have well nurtured their entrepreneurial skills and have grabbed the opportunities to own and lead their start-ups, the rest have chosen to extend their academic journey abroad.

The year was successful for many faculty members who have tried their hands in consultancy ventures. Technical and academic research has taken its heads up with notable government-industry-international tie-ups and collaborative activities. This academic year our top priority lies in procuring external funded research grants.

Looking to the future, the school's vision is to address and work towards the NEP 2020 and UN's Sustainable Development Goals. We are sure of getting there by fuelling initiatives by growing our faculty-student breadth and talent, and augmenting our infrastructure to support state-of-the-art education, learning and research.

SRM's School of Computing strives to fulfill the dreams of its students as Meritorious Professionals of the future!

Dr.Revathi Venkataraman
 Professor & Chairperson
 School of Computing

#### **Message from Head of the Department**

Welcome to the Department Artificial Computational Intelliaence! Intelligence, Software Engineering, and Machine Learning are growing fields in today's world. To meet the emerging reality, students are the ones who can make an impact on the world, and strive for a better and more comfortable future for everyone by solving real-world problems.



As future jobs will pair computer intelligence with human knowledge, skills, character qualities and values, it will be our capacity for innovation, awareness, ethical judgement and sense of responsibility that will equip us to harness machines to shape the world for the better.

I am confident that the students of the department would justify the credibility of the department by showing a high level of professional competence in their respective fields. Our department has responsibilities, including leading the strategy for delivering an outstanding student experience, widening participation, student success and academic and community partnerships which we have been doing from the beginning. The dedication shown by the students in the field of education is a direct reflection of our dedication towards them, which is impeccable. Throughout the ups and downs, we have all stood as a team and helped each other grow mutually.

— Dr.Annie Uthra
Professor & Head,
Department of Computational Intelligence
School of Computing

#### 02, June 20222

#### Counselling Desk



Counselling Cell of CINTEL department was inaugurated by Dr. Kandasamy, IPS, Director General of Police / Director Vigilance and Anti-Corruption to create a platform for the students to speak out what is in their mind without having a feeling of being judged or commented on.

The main aim of the team from counselling is to provide a way to self-discovery, self-acceptance and brings mental peace. Counselling will provide a path where the students can express what

they feel and bring about clarification and validation in your life.





"Courage doesn't happen when you have all the answers. It happens when you are ready to face the questions you have been avoiding your whole life."— Shannon L. Alder. Various activities were conducted by the counsellors in each classroom to encourage students to open up discuss, participate and express without being judged. Team Counseling, CINTEL promises to constantly support students in every hurdle throughout their journey at SRM

#### Counselling Desk





"The Struggle you're in today is developing the strength you need tommorrow.

-Robert Tew

"Don't Be Pushed by your problems. Be led by your dreams. -RALPH WALDO EMERSON

An arrow can only be shot by pulling it backward. So when life is dragging you back with difficulties, it means that it's going to launch you into something great.

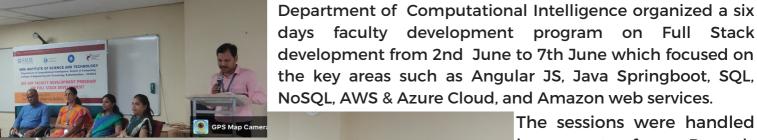
THERE IS NO FAILURE. YOU EITHER WIN OR YOU LEARN

-ANONYMOUS

"IT'S THE LITTLE CONVERSATIONS THAT BUILD THE **RELATIONSHIPS** ON EACH STUDENTS."



#### Events



The sessions were handled by experts from Renault Nissan Technology & Business Centre India (RNTBCI) and delivered hands-on session to the participants on different stack of web development.

#### Full Stack Development - Tune 2nd - 7th, 2022

Six days Faculty development program on "Machine Learning from Mathematical View Point", has aimed to provide a mathematically rigorous introduction to these developments with emphasis on machine learning methods and their analysis. This 6 days' FDP had varied topics relevant to Mathematics Fundamentals such as Linear Algebra, Calculus, Random Variables, Probability theory etc along with Different Machine Learning Algorithms which are used for many smart applications (Finance, Medical and Agriculture etc)...





Participants got idea about Machine Learning Fundamentals and its algorithms along with mathematical formulas used behind that algorithms. Deep Learning involvement in Software Engineering process also explained briefly using NLP concepts by the industry experts. How to improve performance of the system by changing mathematical formulas parameters in explained, so that the researchers can use this topic as their research work.

"Machine Learning from Mathematical View Point" - Tune 20th - 26th , 2022

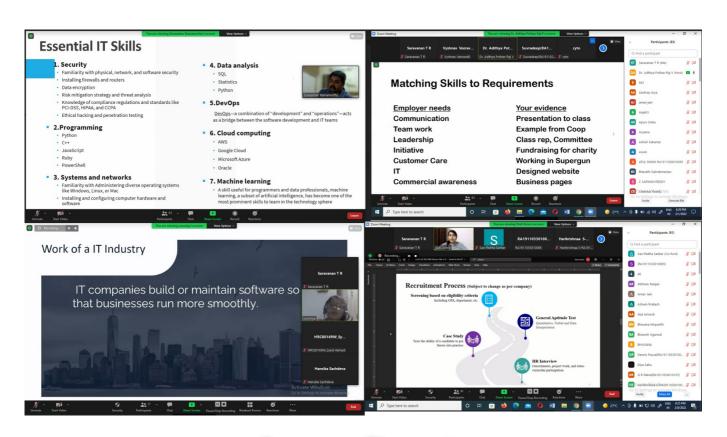
#### Events



"A Hands-on workshop on Deep Learning for industry 4.0 with a computer vision-based approach", was conducted by AJNA AI and team. The training workshop's objective is to familiarize the participants with the deep learning techniques and working with the NVIDIA JETSON NANO DEVELOPER Kit.

The sessions were handled by experts from AJNA AI team. The training session took place for 4 days in the span of May and June 2022. Ajna AI and the team discussed a basic idea about the whole workshop, and the approach to heading with the projects, and the way of approach to solve each of the problem statements.

Deep Learning for Industry 4.0 with Computer vision based approach using Tetson - 9th May, 2022



Placement Talks a Glimpse

#### Events

PILS

Valediction Ceremony 2021-22 and First Decade Celebrations



Pals Valediction Ceremony 2021-22 & First Decade Celebrations @ Indian Institute of Madras

PALS had 65 programs and interventions to faculty, students and management of SRM INSTITUTE OF SCIENCE AND TECHNOLOGY-KATTANKULATHUR, where 97 faculty and 120 students participated. The proficient team comprising of DR. C. LAKSHMI, the Executive Member 1, DR.R.RAMYA, the Executive Member 2, C. ARUN, the innoWAH! Coordinator, DR. C. LAKSHMI the VLABS Coordinator and ADVIKA SRINIVASAN and ALURU LEELA RANI, the Student Leaders under the leadership of the Dr. T. V. GOPAL the Dean, college of Engineering and Technology as a team helped in transforming the culture of the institution, to be more responsive and responsible.

PALS congratulates the institution for both their reach and performance in the various program events.

- First prize & second prize in the online quiz conducted post Industry Speaks / T2P sessions.
- Sparkling Stars (Students scoring 60% and above) in the online quiz conducted post Industry Speaks / T2P sessions.
- Special mention in Analyze Industry Case study problem solving event.
- First Prize in the Hackathon event conducted with the support of 3D NexGen Industry Partner
- Two Student Leaders qualified for Internship certificate.
- Faculty Participation: IITMRP VISIT-11, FDP By Industry-10, FDP-TLC-4, FSDP-IBM-2,
- Industry Visit-1, FDP AI ML-3, RUTAG-13, VLAB-35

# Collobrations

#### Center for AT in Health Science, association with BU



Dr. Mohammad T. Khasawneh, Ph.D. SUNY Distinguished Professor and Chair, Systems Science and Industrial Engineering Associate Director, Watson Institute for Systems Excellence, Director, Healthcare Systems Engineering Center, Graduate Program Director, State University of New York at Binghamton, Binghamton, New York 13902

SRM Institute of Science and Technology and Binghamton University, State University of New York, USA has collaborated and formed a BU-SRM centre for AI in Health Sciences. BU Professors explained SRM team to understand the health sciences projects/problems in USA. They have arranged a virtual webinar to our SRM students – (Department of Computational Intelligence - School of Computing) about their master's program in Systems Science, which includes focus areas such as ML/AI, complex systems modelling, network science modelling, and many other application areas.

#### Center for AT in Earth Science, association with Alabama



SRM Institute of Science and Technology is association with The University of Alabama, Huntsville, Alabama has collaborated and formed a Centre for AI in Earth Sciences. In collaboration with Alabama professor at SRM university has undertaken project in Earth Science problem under different titles such as

- Synthetic Aperture Radar Imagery Based Mosquito Habitat Detection using Deep Learning
- Deep Learning based cyclone intensity estimation using INSAT 3D IR imagery
- Wildfire detection along with components of smoke ,amount of smoke and level of hazardous
- Cyclone track analysis and prediction using ML techniques
- Regional Smoke Modelling for Explosive and Wildfire Detection Using Goes Satellite Images
- Detection of transverse cirrus bands
- Smoke detection Al



#### ROBO LAB & NQX Wolves



ROBOLAB Team, Department of Computational Intelligence, SRM Institute of Science and Technology has signed an MoU with NYX\_Wolves Team on 13th July 2022.

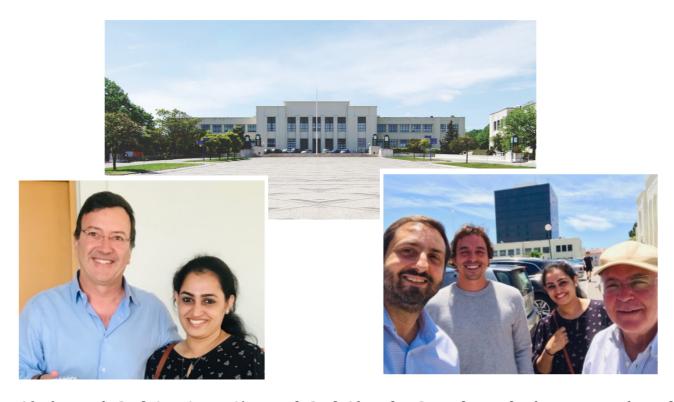
#### Centre of Excellence on AI/DL, HPC, Data Science.



SRMIST and NVIDIA collaborate to enable the Center of Excellence in Artificial intelligence to cater to its research community. This Centre for AI is built on to achieve higher research on Deep-Data Intelligence and Pattern Analysis for Industrial Vision Computing and Communications. This collaboration enables the research Institute to have the required infrastructure to impart and cater research-oriented outcomes to its research scholars, scientists, and interested research groups in AI practice. The collaboration also caters to enabling the Institute to set up a feasible research platform for courses for supporting research professionals who want to attain new solutions in AI research. The research center will enable to offer different platforms, project work, research course works along with hands-on training facilities to its research scholars and scientist, in the area of AI including Deep Learning, Machine Learning, Big Data Analytics, vision computing, video analytics, Unmanned vehicle simulations and so on.

# Collobrations

#### MoU with Instituto Superior Tecnico, University of Lisbon, Portugal



Dr. Athira Nambiar with Prof. Jose Santos Victor and Prof. Alexandre Bernardino and other team members of Institute for Systems and Robotics, Instituto Superior Tecnico Lisbon during her visit

As a part of the collaborative initiative of SRM Institute of Science and Technology, Dr. Athira M Nambiar, Research Assistant Professor, Dept. of CINTEL visited her Almamater Instituto Superior Tecnico, University of Lisbon, Portugal during the 4/6/2022-7/6/2022 and initiated the first steps to sign an MoU with them. In this regard, she made an invited talk with the faculty from Institute for Systems and Robotics (Dr. Jose Santos Victor and Dr. Alexandre Bernardino) explaining the infrastructure and research prospects of SRMIST. Based on the initial discussions, ISR team has agreed to collaborate on the common areas of research interest and help CINTEL to establish a "Centre of AI for Vision and Robotics." More discussions involving international relations and other concerned divisions are underway to make this initiative a reality.

#### Specialized Lab's



Creating an ecosystem where the learners become inspired by robotics, exploring the future of automation technology, imbibe trending technology and groom the freshers, amateurs to pro to face challenging national and international competitions. The lab kindles creativity, provokes curiosity of the young minds giving and experimental bed to gain hands-on experience in elevating their skill set. The lab is backed specialized multidisciplinary faculties along with esoteric collaboration with robotics industry and international robot labs, AIRO lab paves the way to enhance interactions through Artificial Intelligence. To support the futurist venture, our esteemed university, academic fraternity and dynamic research groups, acts as a backbone for the proliferation of the lab.

The AI ROBO LAB is designed to teach students about the function of industrial robots and humanoid with the concepts of AI. The Robots can be programmed and put into real time implementation. Students will be able to learn and understand different software tools to create and model designs based on available hardware and program them to work. The availability of different robots will enhance the student's creativity in Robotics.

Tetrix, QBOT2e, Auto Auto, NaO and Niryo are the bots which are established in the Al ROBO Lab. These Robots are high end bots for learning purpose that facilitates the students to up skill the Al&ML ability for the Robots.



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#### **PATENTS**

granted

- Mrs. C. G. Anupama, Dr. Anitha D., Dr. Aruna S., Dr. M. Maheshwari, Dr. A Saranya received grant for the patent titled, "The Investigation Technique of Object using Machine Learning and System and thereof", IP Australia, April 2022.
- Dr. T. R. Saravanan, Dr. S. K. Lavanya received grant for the patent title," Portable Stand with Digital Saline Liquid Level Monitoring and Alerting Device", May 2022.

#### **PATENTS**

published

- Dr. T. S. Shiny Angel published a patent titled, "A METHOD FOR EARLY PREDICTION OF DISEASE USING FEATURE SELECTION ON FUSED", Publication Date: 17/06/2022.
- Dr. Alice Nithya, Dr. S. Amudha, Dr. Vimaladevi M., Dr. A. Revathi, published a patent titled, "DIAGNOSIS OF ABNORMAL RESPIRATORY SOUNDS USING DEEPCNN BASED ON SYNTHETIC NOISE INPUT", APPLICATION NUMBER 202241027292, IP India, 27/05/2022.
- Dr. S. Krishnaveni published a patent titled, "AN INTELLIGENT SMARTPHONE BASED CLINICAL DECISION SUPPORT SYSTEM FOR DIABETIC RETINOPATHY DETECTION USING DEEP LEARNING AND EXPLAINABLE AI", Application No.202241024846 A, Publication Date: 05/05/2022.
- Dr. S. Vimal published a patent titled," Integration of Computational Intelligence and Artificial Intelligence in Human Resource Analytics", APPLICATION NUMBER 202241023649, IP India, April 2022.
- Dr. N. Meenakshi published a patent titled, "IOT BASED WEARABLE HEALTH MONITORING AND ASSISTED LIVING OF ELDERLY PEOPLE".



#### Placement Corner

#### **MARQUEE**

#### Congratulations



Mr.Thejaswin S Paypal - CTC 26.6L



Mr.Darshan Ramesh Paypal - CTC 26.6L



Ms.Amulya Adobe - CTC 26L



Ms.Aishwarya Jayaraman Adobe - CTC 26L



Ms. Shubhankita Sood Adobe - CTC 26L



Ms. Indira Dutta Hyperverge- CTC 21L



Mr.Srijarko Roy Wells Fargo - CTC 20L



Mr.Vishant Nambiar Autodesk - CTC 20L



Mr.Saurav kumar Squad Cast - CTC 20L

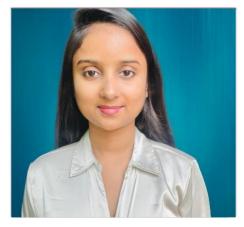
#### Placement Corner

#### **MARQUEE**

#### Congradulations



Mr.Shinjinee Maiti Goldman Sachs - CTC 30L



Mr.Sakshi Choudhary Bank of New York - CTC 22L

#### 2019-2023

Marquee Offers

Secured 11 marquee offers with CTC range from 20 - 30 L

Super Dream Offers

Secured 29 super dream offers with CTC range from 12 - 18 L

**Dream Offers** 

Secured 17 dream offers with CTC range from 06 - 10 L

Internship Offers

Secured 128 Internship offers with Highradius.

**Total Placements** 

Secured 185 placements till date.

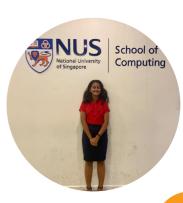


#### STUDENT ACHIEVEMENT



Global Academic Internship Program @ NN Jingapore

Ms.Aditi of II year B.Tech Computer Science and Engineering with Specialization in Software Engineering has Successfully Completed her Internship in Artificial Intelligence and Machine Learning at National University Singapore (NUS), Singapore.





Mr.Joel of II year B.Tech Computer Science and Engineering with Specialization in Software Engineering has Successfully Completed her Internship in Artificial Intelligence and Machine Learning at National University Singapore (NUS), Singapore.



#### STUDENT ACHIEVEMENT

Mr. Derill Sebiraj of I year B.Tech Computer Science and Engineering with Specialization in Artificial Intelligence and Machine Learning has participates in ACE' 22 Long jump event and secure 1st place.





Mr.Shaffin Reyods I Yr B. Tech Artificial Intelligence has secured 1st Position in the Mens Singles Category and 2nd Position in the Mens Doubles Category in the Badminton in ACE 2.0 organized by Sports club of SRM DSA



#### STUDENT ACHIEVEMENT



Mr. Amanpreet Singh Setia of final year B.Tech Computer Science with Specialization in Software Engineering has secured an International Internship offer with Amazon, Germany.

According to him "Education is not just about academics. It's about character building and excelling in general spheres of life. And that's why I am proud being an SRMite". SRM University has not just given me the opportunity to learn through academics but helped me in developing a pragmatic approach towards life.

This university gave me the opportunity to intern with reputed MNCs like Samsung and SS&C Eze in India which also got converted to full time role in SS&C Eze. This support led me to bag SDE Internship offer from Amazon, Germany.

Today, if I had to thank someone for my success apart from my family, I would thank this college, my second home. I am proud to be a part of this procession called, 'Learn, Leap and Lead'.

Mr. Kashish Ahlawat of final year B.Tech Computer Science with Specialization in Software Engineering has secured an offer at Indian Navy

he claimed that, "The great aim of education is not knowledge but action". I feel extremely lucky for the ecosystem that SRMIST provided in the 4 years that I spent because it would've been impossible to find it elsewhere. I got to participate in the National Cadet Corps' Republic Day Camp where I was adjusted the All India Best Cadet. This could only happen because apart from academics, I was able to grow in other spheres due to my teachers, seniors and the facilities which the institute provides.



"Success is not the key to happiness. Happiness is the key to success. If you love what you are doing, you will be successful." – **Herman Cain** 



#### FACULTY COMPLETED PH.D



Dr.S.Aruna Completed her Ph.D Degree from SRM Institute of Science and Technology, defended her Ph.D work titled "Intelligent Learning Algorithm for Counterfeiting Side-Channel Attack Using Adaptive Chaotic S-Boxes For AES" on 10th June 2022.

Dr.B.Jothi Completed her Ph.D Degree from SRM Institute of Science and Technology, defended her Ph.D work titled "Enhanced intrusion detection system for iot network via deep learning approaches " on 22nd June 2022.





Dr.Salomi Samsudeen, Completed her Ph.D Degree from Anna University, defended her work titled " A Novel Diabetes Prediction Model Using Machine Learning and Enhanced Deep Neural Network " on 23rd June 2022.

Ms.Sonal Ayyappan, Research Scholar of Dr.C Lakshmi completed her Ph.D, by defending her work titled, "Image Deduplication method for Secure Transmission and Storage of Medical Images " on 7th July 2022.



## Publication

- **Maragatham, G**, et al published paper titled,"AdvIris: a hybrid approach to detecting adversarial iris examples using wavelet transform", International Journal of Speech Technology, pp.1-7.
- Maragatham, G, et al published paper titled, "Hybrid approach with Deep Auto-Encoder and optimized LSTM based Deep Learning approach to detect anomaly in cloud logs", Journal of Intelligent & Fuzzy Systems, (Preprint), pp.1-15.
- **Dr.Kottilingam K**, et al published paper titled, "A Blockchain-based Framework for Transparent, Secure, and Verifiable Online Examination System".
- **Dr.Kottilingam K**, et al published paper titled, "Blockchain-Integrated Multiagent Deep Reinforcement Learning for Securing Cooperative Adaptive Cruise Control".
- **Dr.M.Ferni Ukrit**, et al published paper titled, "Stacking Optimized With Artificial Bee Colony for Driving Style Classification by Feature Reconstruction from OBD II Data", Soft Computing, Springer, ISSN 1432-7643.
- **Dr.M.Ferni Ukrit**, et al published paper titled, "Classification and Prediction of Leaf Diseases in Grape using Optimized CNN", Advances in Intelligent Systems and Computing, Springer, ISSN: 2194-5357, Volume 1396,pp.631-636.
- **Dr.M.Ferni Ukrit**, et al published paper titled, "Video Based Human Gait Activity Recognition Using Fusion of Deep Learning Architectures", Advances in Intelligent Systems and Computing, Springer, ISSN: 2194-5357, Volume 1396, pp.571-579.
- **Dr.M.Ferni Ukrit**, et al published paper titled, "Classification Of Gait Pathology Using Enhanced Convolutional Neural Network", IEEE Digital Library, ISSN 2329-7190.
- **Dr.T.S.Shiny Angel**, et al published paper titled, "A Survey on IoT Security: Security Threads and Analysis of Botnet Attacks Over IoT and Avoidance", Lecture Notes in Networks and Systems, 2022, 370, pp. 141–154.
- **Dr.T.S.Shiny Angel**, et al published paper titled, "Monitored Access Distribution Method for Finding the Abnormality in the Internet of Things Based Smart City Application", Materials Today: Proceedings, 2022.
- **Dr.M.Uma**, et al published paper titled, "Classification of EEG based Emotion analysis using Bi-LSTM," International Conference on Internet of Things (ICIOT 2022)", April' 2022.
- **Dr.M.Uma**, et al published paper titled, "Performance Model Evaluation of Seizure Classification Using Statistical Features and Random Forest algorithm", IEEE International Conference on Electronic System and Intelligent Computing( ICESIC-22), ISBN:978-1-6654-8387-2.10.1109/ICESIC53714.2022.9783473.

- **Dr.M.Uma**, et al published paper titled, "Improving usability of assistive systems for visually Impaired people", International E -conference on Computational Intelligence and Communication Networks(E-ICCICN22), April 2022.
- **Dr.M.S.Abirami**, et al published paper titled, "Low Noise Amplifier Design with Current Reuse Architecture and Pre-distortion Technique for Nanoelectronic Sensors Operating at 2.4 GHz", J. Nano- Electron. Phys. 14 No 3, 03006 (2022) DOI: https://doi.org/10.21272/jnep.14(3).03006.
- **Dr.G.Senthil Kumar**, et al published paper titled, "An Effective Bootstrapping Framework for Web Services Discovery Using Trigram Approach", Mobile Information systems, Vol 2022, Issue 1, P.No 1-12, June 2022 .DOI -10.1155/2022/2373596.
- **S. Krishnaveni**, et al published paper titled, "Efficient Disease Risk Prediction based on Deep Learning Approach," 2022 6th International Conference on Computing Methodologies and Communication (ICCMC), 2022, pp. 1197-1204, doi: 10.1109/ICCMC53470.2022.9753851.,April 2022.
- **Krishnaveni, S**, et al published paper titled, "Detection of diabetic retinopathy and related retinal disorders using fundus images based on deep learning and image processing techniques: A comprehensive review. Concurrency and Computation: Practice and Experience", e7032., May 2022.
- **Krishnaveni, S**, et al published paper title, "Convolutional Neural Network Based Plant Nutrient Deficiency Detection. ECS Transactions, 107(1), 5625, April 2022.
- **Dr.Anitha D** et al received acceptance for the paper titled, "Hybrid Deep Learning-Based Adaptive Multiple Access Schemes Underwater Wireless Networks", Intelligent Automation & Soft Computing, April 2022.
- Mrs.J.Jeyasudha, et al published paper titled, "EC-BED-NETS: A Novel Deep Learning Framework for Recognizing Dominant Nodes in Multifaceted and Social Networks", Big Data, Volume: 10 Issue: 3,pp.171-185 https://doi.org/10.1089/big.2020.0304.
- **Dr.S.Amudha**, et al published paper titled, "F-CHILS maps a novel encryption scheme for secured medical data transmission using FoG-ban environment", International Journal of Ad-Hoc and Ubiquitous Computing, Inderscience Journal ,Vol. 40, Nos. 1/2/3,June 14, 2022.
- **Dr.B.Hariharan**, et al published paper titled, "REAL TIME ORDERED-UNORDERED SESSION KEY DISTRIBUTION SCHEME FOR IMPROVED DLP AND IRM IN CLOUD ENVIRONMENT", Journal of Theoretical and Applied Information Technology 15th May 2022. Vol.100. No 9.
- **Dr.Vimaladevi M**, et al published paper titled, "Fuzzy-Based Approach for Clustering Data with Multivalued Features", Hindawi, Wireless Communications and Mobile Computing, Volume 2022, Article ID 3818107, 9 pages, May 2022. https://doi.org/10.1155/2022/3818107.

- **Dr.A.Revathi**, et al published paper titled, "Analyzing the Evolution of Modern Tamil Script for Natural Language Processing", ECS Transactions, Volume 107, number1, 2022.
- **T R Saravanan**, et al published paper titled, "Efficient Peer-toPeer Content Dispersal by Spontaneously Newly Combined Fingerprints," Intelligent and Cloud Computing, Smart Innovation, Systems and Technologies, Springer Book Series, Vol. 286, Chapter 6, pp.65-75, April 2022.
- **T R Saravanan**, et al published paper titled, "Machine Learning for Efficient Peer to Peer Content Dispersal by Spontaneously combined Fingerprints," Lecture Notes in Networks and Systems, 430, pp 459–467, May 2022.
- T. R. Saravanan, et al published paper titled, "Artificial Intelligent Approach to Predict the Student Behavior and Performance," Intelligent and Cloud Computing, Smart Innovation, Systems and Technologies, Springer Book Series, Vol. 286, Chapter 6, pp.269-276, April 2022.
- **Dr.E.Poongothai**, et al published paper titled, "A new algorithm for time series prediction using machine learning models", in Evolutionary intelligence, Springer, June 2022.
- **Dr.P.G. Om Prakash**, et al published paper titled, "Surveying the Effectiveness and Efficiency of Enterprise Resource Planning Systems",
- **Dr.R.Beaulah Jeyavathana**, et al published paper titled, "Prediction of disease and suggestion of specialist using big data techniques", AIP Conference Proceedings, June 2022.
- **Dr.Athira M. Nambiar**, et al published paper titled, "Face Age Progression With Attribute Manipulation", ICPRAI 2022 International Conference on Pattern Recognition and Artificial Intelligence, Paris, France, June 2022.
- **Dr. S. Nagendra Prabhu**, et al published paper titled, "Projective Exploration on Individual Stress Levels using Machine Learning", IEEE International Conference on Artificial Intelligence and Smart Energy (ICAIS-2022) IEEE Xplore Part Number: CFP22OAB-ART; ISBN: 978-1-6654-0052-7, DOI: 10.1109/ICAIS53314.2022.9743109
- **Dr. S. Nagendra Prabhu**, et al published paper titled, "Al based Chatbots using Deep Neural Networks in Education", IEEE International Conference on Artificial Intelligence and Smart Energy (ICAIS-2022) IEEE Xplore Part Number: CFP22OAB-ART; ISBN: 978-1-6654-0052-7, DOI: 10.1109/ICAIS53314.2022.9742771.
- **Dr. S. Nagendra Prabhu**, et al published paper titled, "Survey on Finger Vein Recognition using Convolutional Neural Network", IEEE International Conference on Artificial Intelligence and Smart Energy (ICAIS-2022) IEEE Xplore Part Number: CFP22OAB-ART; ISBN: 978-1-6654-0052-7, DOI: 10.1109/ICAIS53314.2022.974289.

- **Dr.Sudha Rajesh**, et al published paper titled, "Vulnerabilities Exploitation in Automative Hacking using Hardware and Software Implementation", IEEE Digital Library, June 2022. DOI: 10.1109/ICICCS53718.2022.9788268.
- **Dr.T.Subha**, et al published paper titled, "Skill Analysis and Scouting Platform using Machine Learning", 2022 International Conference on Communication, Computing and Internet of Things(IC3IoT).
- **Velliangiri**, S, et al published paper titled," Blockchain enabled joint trust (MF-WWO-WO) algorithm for clustered-based energy efficient routing protocol in wireless sensor network. Trans Emerging Tel Tech. 2022; 33(7):e4502. doi:10.1002/ett.4502.
- **Velliangiri, S**, et al published paper titled," Multiclass recognition of AD neurological diseases using a bag of deep reduced features coupled with gradient descent optimized twin support vector machine classifier for early diagnosis", Concurrency Computat Pract Exper. 2022;e7099. doi:10.1002/cpe.7099.
- **Velliangiri, S**, et al published paper titled," Analytical review on deep learning and IoT for smart healthcare monitoring system", International Journal of Intelligent Unmanned Systems, (ahead-of-print).
- Velliangiri, S, et al published paper titled, "Intelligent personal assistant for personal computers using long short-term memory-based verbalizer", International Journal of Intelligent Unmanned Systems, Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/IJIUS-02-2022-0012
- **Velliangiri S**, et al published paper titled," Optimized Navigation of Mobile Robots Based on Faster R-CNN in Wireless Sensor Network", International Journal of Sensors, Wireless Communications and Control 2022; https://dx.doi.org/10.2174/2210327912666220714091426.

- Dr. Saad Yunus Sait acted as a resource person for "Faculty Development"
   Programme on Machine Learning from Mathematical Viewpoint".
- Dr.M.Ferni Ukrit completed the ACM Certification course on "CSEDU Effective Teaching on Machine Learning," IIID, May 2022.
- Dr.C.Amuthadevi acted as a resource person for 'Hands on training on Econtent delivery and LMS tools ' 21 and 22 April 2022, Trichy SRM medical college.
- Dr.C.Amuthadevi acted as an Advisory Committee Member for the International Conference on Data Mining and its Applications on May 23-25, Chevalier T. Thomas Elizabeth College for woman.
- Dr.M.S.Abirami received the project and acted as Principle Investigator for the Project titled "Sustainable Intelligent Transportation Road Accidents Avoidance System" got selected under SATU Joint Research Scheme (JRS) in May 2022.
- Dr.S.Karthick acted as Session Chair for 5th International Conference on Soft Computing and Signal Processing June 24-25-2022- Malla Reddy College of Engineering and Technology, Telangana.
- Dr.S.Karthick Conducted Workshop on SAP Opportunities in Binghamton University, USA on 18th may 2022.
- Dr.S.Karthick Conducted Info session on Opportunities on Higher studies/Project Internship by Dr.Vijayan Sugumaran, Oakland University, 7th July 2022.
- Dr.S.Karthick Conducted Info Session given by Dr.Arifullah from University of Malaysia, Kelantan for SOC, Biotech, Arch on 6th July 2022.
- Dr.S.Krishnaveni completed faculty upskilling program in Great lakes institute
   of management from July 4th to July 15th
- Dr.P.C.Karthik received ACM Certificate on "CSEDU Effective Teaching on Machine Learning," IIID, May 2022.
- Dr.B.Jothi completed faculty upskilling program in Great lakes institute of management from July 4th to July 15th

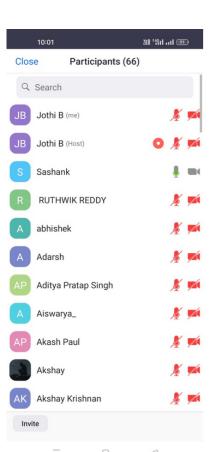
- Dr. S.Amudha acted as Resource Person for the AICTE 6 Days FDP conducted by K.L.N.C.E, Madurai title on "JAX-RPC and Writing Difference Web Services",
- Dr. S.Amudha Completed 10 Days Upskill Training on "Machine Learning", in Great Learning Company, ACM Certificate on "CSEDU Effective Teaching on Introduction to Programming," IIITDM, May 2022.
- Dr. S.Amudha received NVDIA DLI Certification on "Building Transformer Based Natural Language Processing and application".
- Mr. C. Arun acted as Resource Person for Anna University Sponsored Six day
   FDTP (Faculty Development Training Program) titled "IT8501-Web Technology" Session on AJAX.
- Mr. S.Joseph James received ACM Certificate on "CSEDU Effective Teaching on Data Structures," IIID, May 2022.
- Dr.B.Hariharan received best Research paper Award, Smart AI Environment to Increase Student Engagement and Innovation Skills in HyFlex Learning Model at the 3rd Symposium on Information Technology and Applied Mathematics (SITAM) held at University of Technology and Applied Sciences-Shinas, Sultanate of Oman on 24th May 2022.
- Dr.B.Hariharan acted as Evaluator for the Smart India Hackathon 2022, Evaluated 80 Project Ideas.
- Dr.B.Hariharan received ACM Certificate on "CSEDU Effective Teaching on Python Programming," IIITDM, May 2022.
- Dr.B.Hariharan received Appreciation award by school of computing ,SRMIST-high impact factor journals.
- Dr.B.Hariharan received Appreciation award by school of computing ,SRMIST-interdisciplinary project (SIIC).
- Dr.R.Siva received Appreciation award by school of computing, SRMIST- high impact factor journals.
- Dr.Vimaladevi M nominated as Nvidia DLI University Ambassador for Fundamentals of Deep Learning Completed course on CSEDU Effective Teaching in Machine Learning.

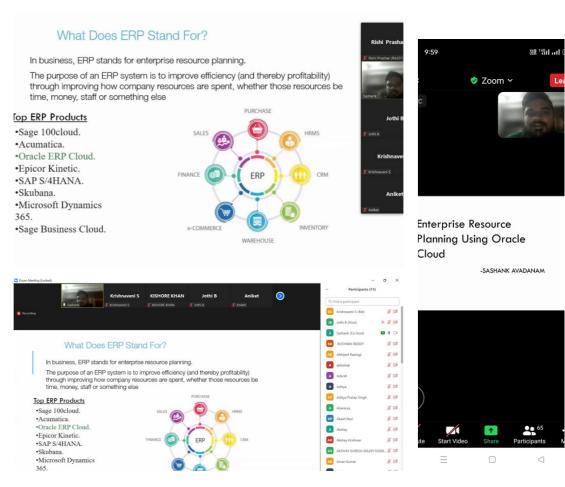
- Dr.T.R.Saravanan received ACM Certificate on "CSEDU Effective Teaching on Computer Networks," IIITDM, May 2022.
- Dr.T.R.Saravanan Co-ordinated for 6-Days FDP on Machine Learning on Mathematical View Point from 20.06.22 to 25.06.2022.
- Dr.S.Sadagopan received ACM Certificate on "CSEDU Effective Teaching on Machine Learning," IIITDM, May 2022.
- Dr.E.S. Madhan acted as a Resource Person on FDP on "Recent Trends on Healthcare applications using Machine Learning" between 13-06-2022 and 18-06-2022 at Kings Engineering College, Sriperumbudur, Tamilnadu.
- Dr.Sridevi Ponmalar received NVidia DLI certificate for completion of DLI Fundamentals of Accelerated Data Science with RAPIDS.
- Dr. R. Beaulah Jeyavathana received Award of course completion -Database Foundations by Oracle Academy on 2.5.2022.
- Dr.R.Beaulah Jeyavathana received NVidia DLI certificate for completion of DLI Platform course for instructors.
- Dr.Athira M. Nambiar received joint Projects (as Co-Pi) under SATU programme.
- Dr.Athira M. Nambiar received International Travel Grant support from SERB,
   DST.
- Dr.Athira M. Nambiar Invited visit and Initiated MoU with Instituto Superior Tecnico, Lisbon, Portugal.
- Dr.A. Robert Singh acting as a CO-PI for 2022 for SATU Joint Research Scheme.
- Dr.Sudha Rajesh Received the "Best Teacher Award" in the Year 2022 from the Scientific International Publishing House – Registered Under the Ministry of SME, Government of India.
- Dr.T.Subha acting as CO-PI for 2022 for SATU Joint Research Scheme.
- Dr.K.Suresh appointed as Journal Reviewer in ABCD index Portal June2022.

#### Alumni Events







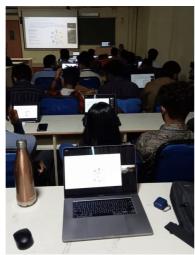


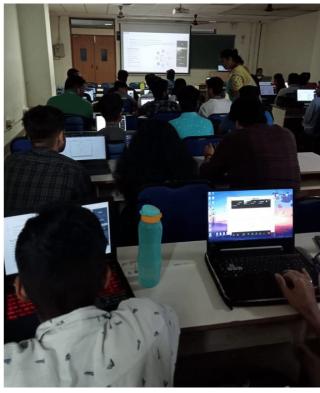
#### Alumni Events















#### ALUMNI MESSAGES



#### MY JOURNEY TO ENTREPRENEURSHIP -Soumi Roy, E-entrepreneur. (2014-18 Batch)

"I am a firm believer that true entrepreneurs are made, not born. I have always studied hard and had huge hopes for a good job. As growing up it was told to us that getting a good job should be our focus. And in that chase we often forget our dreams and give in to what our family and society expects from us.

After my graduation, I started working with a huge MNC. Soon, I realized that I was not in the right place, and that I was not going to achieve my life's goals if I am in this 9-5 circle. So I started working on a Plan B, I tried several things but unfortunately nothing worked out.

As I was looking for an opportunity where I could add value to a lot of people at a global level. I understood that with the right set of mind, with the right people, with the right support, things will happen. I started working on an e-commerce based project at international level, which gives me an opportunity to do business overseas. I started with a lot of excitement and most importantly with a Dream to make it big.

The past is a source of knowledge and at the future is a source of hope. Will I be able to make it? What if I don't? Can I do it? What people will say? Will people support me? Will I be able to share my vision? Trust me I have had all these questions, in fact add dozens more to it. In the end, it only matters whether we believe in ourselves. Always believe that you can do it and you will also make a lot of friends because they will be there by your side and the journey will be wonderful.

#### STUDENT ARTICLE

#### 3D PRINTED BONES

Jaideep Singh Garlyal- III year B.Tech CSE with Specl. SWE

#### Intro

Bone is composed of two distinct osseous tissue forms called cancellous and cortical bone. The cancellous, or inside of the bone, is spongy and contains between 50 and 90 percent porosity. Cortical bone, on the other hand, is the dense outer layer of bone with less than 10% porosity. The interactions between osteocyte, osteoblast, and osteoclast cells drive the dynamic remodeling, maturation, differentiation, and resorption that occur in both forms of bone. Osteoblasts are largely in charge of creating new bone, whereas osteoclasts are in charge of breaking down existing bone. Bone remodeling, a dynamic process involving osteoclasts and osteoblasts, is in charge of preserving a strong bone. Although the ability of bone to mend itself is widely known, severe bone abnormalities cannot fully recover.

The 3D printing business promises everything from low-cost home construction to reasonably priced durable armor, but one of the most intriguing applications of the technology is the creation of 3D printed bones.

Tricalcium phosphate, a substance with characteristics comparable to those of human bones, is used by the business Ossiform, a specialist in medical 3D printing, to make patient-specific replacements of various bones.

It's really simple to utilize these 3D-printed bones. An MRI can be performed in a hospital and uploaded to Ossiform, which then develops a 3D model of the required patient-specific implant. Once the design has been approved by the surgeon, it can be printed and used during surgery.

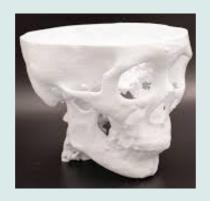
These 3D-printed bones are unique in that they use tricalcium phosphate, which makes them more durable.

#### **History & Process**

A powder-based freeform fabrication technique called 3DP was created in the early 1990s at MIT (Cambridge, MA) by Sachs et al. Binders are printed using a standard ink-jet print-head on to loose powders in a powder bed. Rapid tooling utilizing metals and ceramics was the primary focus of early research in this field.

A schematic illustration of the 3DP procedure is shown in . 3DP is helpful for the direct production of scaffolds with customized porosity from a CAD file for bone tissue engineering. To increase the quality of the printed product, key factors such powder packing density, powder flowability, layer thickness, binder drop volume, binder saturation, and powder wettability must be tuned before printing.







According to the instructions in the tool path file made from the CAD file, the printhead sprays the binder across the build layer in a number of passes. Locally binding the particles and hardening the wetted area, the binder, which may be organic or water-based, causes a reaction akin to the hydraulic setting reaction in cements. Significant roles are played by the binder drop volume and saturation. The amount of binder emitted from each nozzle per drop during printing is known as the "binder drop volume," which is determined by the viscosity and density of the binder. The drop volume and powder packing density are synchronized to produce the binder saturation data needed for printing. A bigger drop volume necessitates a lower packing density for a constant packing density.

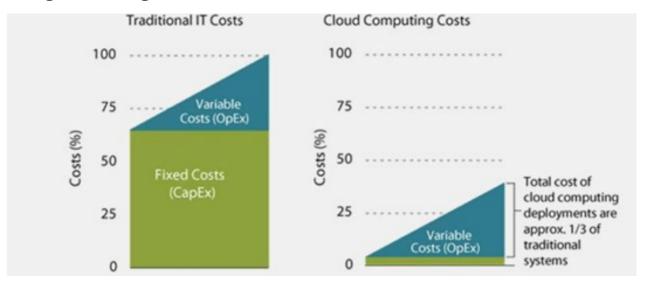
A Northwestern University research team has developed 3D printable ink that produces a synthetic bone implant that rapidly induces bone regeneration and growth. This hyper-elastic bone material is easily customizable to different shapes and could one day be especially useful in the treatment of bone defects in children.

Particle3D is the developer of a patented 3D printing technology to produce natural, patient specific, and resorbable bone implants that remodel into real living bone.

#### Faculty Article

#### How Cloud differs from Conventional IT Infrastructure?

Making the right IT model choice for your company is crucial. Every business requires a secure storage location where information and programmes can be quickly accessible while operating expenses are kept to a minimal. If you're considering moving your data from traditional IT infrastructure to cloud-based platforms, keep reading to learn more about how they vary and the advantages of doing so.



Cloud computing is a lot more ethereal than traditional virtual hosting. All servers, software, and networks are housed in the cloud, off-site, and not via physical hardware. It is a concurrently hosted real-time virtual environment spread across numerous separate servers. Therefore, you can rent data storage space from cloud computing companies on a more cost-effective payper-use basis rather than investing money into buying physical servers inhouse.

The main differences between cloud hosting and traditional web hosting are:

- Resilience and Elasticity
- Flexibility and Scalability
- Automation
- Running Costs
- Security

Dr.B. Hariharan Ms.C.Og. Anypama Dr.D. Anitha

# MEET THE TEAM

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Ms.C.G.Anupama



Dr.D.Anitha



Mr.C.Arun

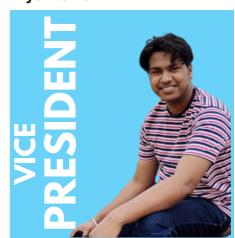




Samudra Banerjee



Riya Batla



Swetanshu Agrawal



Gopi Krishna D



Mayank Mukherjee



Munshi Afroze Alam



Tushar Roy 37

#### எவ்வ துறைவது உலகம் உலகத்தோடு அவ்வ துறைவ தறிவு.

As dwells the world, so with the world to dwell In harmony- this is to wisely live and well.



உயர்ந்தோர் வழியில் உலகம் எவ்வாறு நடைபெறுகின்றதோ அதற்கேற்ப நடந்து கொள்வதே அறிவாகும்.

To live as the world lives, is wisdom.