



Reminisce

the **WIZARDING**
world!!

Pg 22

CACHE

presented by



**CAN THE
INTERNET BE
NUKED BY A
BUG?**

Pg 16

Keepin'
it fresh with
FRESHWORKS

Pg 17

"Learn,
Unlearn,
Relearn"

Explore
the
Vibrant
minds
of DIST

TECH`SPOSURE
Pursuing the
ML path

Pg 18

Delve into
I++'21

Pg 09

**STATISTICS
ON CURRENT
PLACEMENT
DRIVE**

Acknowledgements

Our sincere thanks to the honorable Head of the Department Dr.S.Sridhar for his continuous motivation for students.

Many thanks to the respected President Of Information Science and Technology Association(ISTA) Dr.S.Swamynathan and beloved Treasurer of ISTA Dr.N.Thangaraj for encouraging us to start with this initiative for the welfare of department of IST.

We thank Dr.S.Bama for reviewing the contents and giving suggestions.

We also thank students for putting their absolute best with respect to the context of the magazine.

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VISION OF THE DEPARTMENT

To educate students with conceptual knowledge and technical skills in the field of Information Technology with moral and ethical values to achieve excellence in an academic, industry and research centric environment.

MISSION OF THE DEPARTMENT

1. To inculcate in students a firm foundation in theory and practice of IT skills coupled with the thought process for disruptive innovation and research methodologies, to keep pace with emerging technologies.
2. To provide a conducive environment for all academic, administrative, and interdisciplinary research activities using state-of-the-art technologies.
3. To stimulate the growth of graduates and doctorates, who will enter the workforce as productive IT engineers, researchers, and entrepreneurs with necessary soft skills, and continue higher professional education with competence in the global market.
4. To enable seamless collaboration with the IT industry and Government for consultancy and sponsored research.
5. To cater to cross-cultural, multinational, and demographic diversity of students.
6. To educate the students on the social, ethical, and moral values needed to make significant contributions to society.

From ISTA...

ISTA is a student run society of DIST which is solely responsible for conducting I++ and ITrix every year. It has always enjoyed a respectable status amongst the students and was set up with the objective to organize various activities that contributes to the academic and professional development of students along with leadership qualities, teamwork and other essential employability skills. Some of our present intiatives are,

-> CACE is our new initiative to represent and uphold the IT department as a whole among CEG's various other departments. This issue is the second edition of CACE.

-> We have already started Internship and Placement training groups to train our students to perform well in the Campus placements and Internship drives.

-> The Team is closely working on making websites for ISTA, ITrix'22 and Chamber of Secrets.

-> We are proud to announce that our intra college symposium - I++ was held on 27th and 28th of December and was a grand success.

-> ISTA with the help of DIST is planing to head some internships available within the department.

-> We also plan to keep an Intra-college Hackathon - Hack-o-Fista'22 for 2nd and 3rd years around February'22.

-> The works for our Inter-College Symposium, ITrix'22 has been kick started. The active involvement of the students of DIST is highly appreciated.

ISTA has a LinkedIn page, ISTA CEG and an Instagram page, ista_ceg. We expect your wholehearted support and will continue to strive hard for the betterment of the Students of our department.

**-Adhis H
Chairman, ISTA**



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Art Work by,
Yogesh P
Second Year, BTech IT



Magazine Release Event

We unveiled “Cache” to the college on December 13, 2021. The event happened at 5 pm at the Ada Lovelace Auditorium in the Department of Information Science and Technology. The crowd consisted of students from all years, those who contributed articles, and those who just came to watch the event and be a part of it. The event was graced with our then Head of Department, Dr. Saswati Mukherjee, Professors Dr. Ranjani Parthasarthy, Dr. Swamynathan, Dr. Selvi Ravindran, Dr. Yogesh, and Treasurer Dr. Thangaraj, to name a few.

Sanjay Ram, a 4th year in the department, kicked off the event with an introduction about the magazine. The baton was then passed over to Adhis, the President of ISTA, who showcased the hard work put into the magazine over the last month and a half. The reception from the students and staff was great. They liked the content and design.

We then asked Dr. Saswati Mukherjee to give a few words about the magazine, and she said that it was beyond her expectations and very much liked the design on it. She even said that the content had good distribution, with not everything being purely technical, there was enough fun in it, the magazine had a good personality.

Dr. Swamynathan lauded the hard work and talent of the members of the Cache team and said that the articles on current projects by the 4th year would be helpful to the juniors. Dr. Thangaraj, the treasurer, was interested in the Tamil articles and said that the Tamil poem in the magazine was quite good. He also said he was looking forward to the puzzles and hoped some of the article genres would appear again in the newer circulations.

The office bearers then gave the first printed copy of the magazine to the dept, which the HoD accepted. Overall, the event was a success, and we would love to thank the students who were a part of it and the teachers that were there during the event, without whom this event could not have been what it was.

-Shankar Subramanian
Final Year, BTech IT





Our Intra-College Symposium I++

Infoview

PRESENTS



POWERED BY
 hubstream

The Department of Information Science and Technology with the Information Science and Technology Association organized the annual intracollegiate “i++ - Iterate to infinity 2021” on 27th and 28th of December 2021 with Infoview as the Title sponsor. The two day symposium comprised of over 10+ technical events and workshops with eye catching rewards for the participants including internships as prizes for the winners.

The first day of i++ - 27.12.2021 was the day of inauguration for the technical symposium. The inauguration began with the presence of our Chief Guest for the day – Mr. Balaji, the Director of our associate sponsor Hubstream, the staff of the Department of Information Science and Technology, the office bearers of ISTA and students from all years.

The inauguration started with lighting of the lamp from the dignitaries on the dias followed by the recitation of our thamizh thaai vaazhthu. ISTA Chairman Adhis from the 4th year delivered the welcome speech followed by insightful and intriguing speeches from the President of ISTA - Dr.S.Swamynathan, Treasurer of ISTA - Dr.N.Thangaraj and our Chief Guest Mr.Balaji. Ms.Indhumathy from 4th year was the anchor, Treasurer of ISTA, Ragul delivered the “Vote of thanks” and the event concluded with the oration of National Anthem. Our Vice Chancellor, Dr. R. Velraj graced us with his presence virtually and gave a speech about the SOP on preventive measures to contain COVID-19 to the students.



Mr.Balaji
Director - Hubstream



Our first event of i++ OLPC or Online Programming Contest was conducted online on the same evening.

The second day of i++ 28.12.2021 kick started with a workshop on Metaverse and several technical events. Mentors from Scopic conducted a Unity XR –Create your own Metaverse workshop. Events like OSPC or OnSite Programming Contest, Web Design, Design Mania, Squid Game, Ninja Coding, Mr. Math, Stats 360, Reverse Coding and Code Decode took place at different venues throughout the day and had active participants from all years of all departments of CEG.

Thanks to our sponsors, the winners of our contests landed internships and exciting rewards! We would like to use this opportunity to mention our sponsors who played a huge role and made it possible in making i++ 2021 happen.

1. Title Sponsor - Infoview
2. Associate Sponsor - Hubstream
3. Intern Partners - Guvi & Kuriyam
4. Media Partner – Guindy Times

We would like to thank the Guindy times team for covering our entire event and interviewing our staff and office bearers to get a clear picture of i++ 2021. Our events were conducted smoothly because of our own volunteers and we are grateful for all the staff, office bearers, volunteers, participants, students and everyone else who made i++'21 a massive success!

-Nauvyashree A
Final Year, BTech IT

Media Partner



Intern Partner



Project Works

ThiruvalluvAR

A n augmented reality E-learning project is developed to provide a platform for user to interact and learn more in the immersive learning environment. This project aims to create a conceptual model for researching the possibility of a new way to learn Thirukurals using augmented reality. AR learning offers interaction through screen touch, movements of devices, etc. to let users experience a new learning style to learn thirukurals rather than through static 2D modes. As a result, we merged the Augmented Reality and Tamil literature concepts – in our case Thirukurals authored by the Tamil poet Thiruvalluvar to give learners a new immersive experience to learn and visualize the thirukural couplets. This application focuses on helping learners understand, visualize and learn each kural and their meanings. In this project the couplets are classified based on flora and fauna. 3D models are created for each component and they are paired with their respective thirukurals. For example, thirukurals with the mention of the animal Tiger are grouped under the Tiger 3D model with their meaning and audio sample. In our application, we have included a lot of flora and fauna from the island biome. Because of the classification based on flora and fauna, as well as the visual and audio interaction with each couplet, learners will be able to grasp the couplets easily. This application also includes a Quiz component that allows the user to test their knowledge of the Thirukural couplets.



Pavithra



Nauyya Shree



Vikram Balaji



Figure 3.2: Display of 3D asset with button



Figure 3.3: Display of thirukural, meaning and respective audio

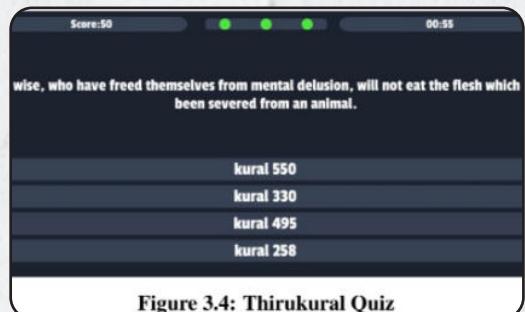


Figure 3.4: Thirukural Quiz

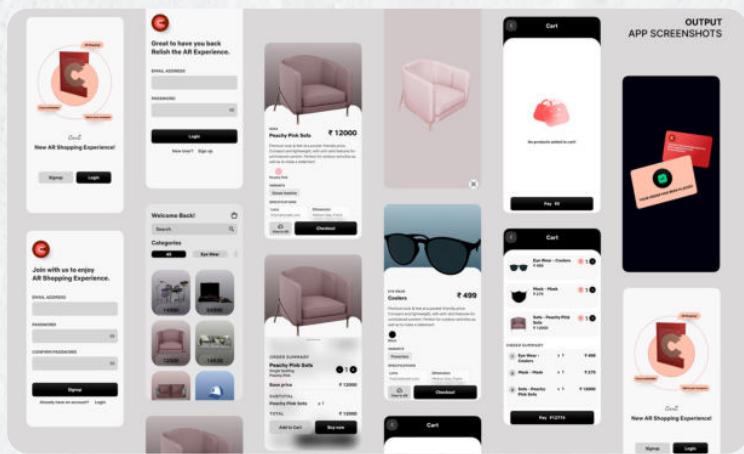


E-Commerce with Augmented Reality

cARt

Augmented Reality is an interactive experience of a real-world environment where the objects that reside in the real world are enhanced by computer-generated perceptual information.

The physical world is three-dimensional but most digital data is displayed on two-dimensional pages, images and screens. This gap is closed by – Augmented reality, a set of technologies that superimposes digital data and images on physical objects and environments. This concept is taken into account and thought of providing a new experience in online shopping enhancing the traditional experience. cARt is an e-commerce mobile application that sells products by providing users a virtual experience of the product. This is developed with Flutter, Google's SDK for crafting beautiful, fast user experiences for mobile, web, and desktop from a single codebase.



This application displays all the available products in its homepage categorized into different categories. Users are allowed to apply filters and search for the required product. The available products are classified as Wearable and non-Wearable products. Each product is displayed in 2D, 3D and AR. On selecting a particular product, a 2D image of it is shown. On clicking the 2D image, users are allowed to look at the 3d view of the object. A button is provided for the AR view and this helps users to experience the product in AR view. All the products that are placed on floors and walls falls under non-wearable category. These products are made to appear on the user's surrounding space. Users are allowed to select a place where the product should be placed using cARt logo that appears on the detected plane. On placing the target in correct position and on clicking the logo, the object is rendered and displayed over the logo.

Products that can be worn by people falls under wearable category. They are made to appear as if users were wearing it. This is done using AR Face tracking. As it has the ability to track the face, all accessories related to face can be projected. Other products like shirt, pants, shoes are projected with relative position to the detected face. This application also has payment options which is done using Razorpay. All the product details and customer details are managed in firebase. The AR part is developed using UNITY 3D. 3D objects are created using Blender and exported in ".glb" format. These objects are incorporated with unity to create AR experience.

Horizontal plane detection:

Horizontal plane is detected using ARPlane Manager and ARRayCast Manager scripts which are provided by ARFoundation package in Unity 3D. Horizontal plane is detected and the 3D objects are placed on the detected plane.



Vertical plane detection:

Vertical plane is detected using ARFoundation package. Vertical plane is detected and objects like Television and paintings are placed on the detected plane.

Face Tracking:

Face is detected using ARKit Facetracking and ARKit XRPlugin packages provided by unity. Face is detected here and objects like caps, mask are placed above the detected face. A face mesh is used to place a custom object and then the face mesh is made transparent making the object to appear above the face.

The AR view of products in a Flutter application is possible through integrating Unity 3D with Flutter. Flutter User Interface and Unity AR models are integrated using Flutter-Unity-Widget plugin which establishes communication between flutter and unity. A Flutter-Unity-Widget package is loaded in Unity. A C-Sharp script is created which switches the scenes in unity. Flutter provides the name of the unity scene to this script as a parameter and the script loads the respective scene which is rendered to the flutter app and the unity scene opens inside the flutter app. A Loading Scene is rendered until the actual scene is loaded hiding the loading time to the user.

Though any application's performance and interaction paves way for its success, User Interface attracts more users to use the application. This application has awesome user interface. Each product provides dynamic experience which is done by providing dynamic background. The major colour of each product's 2D image is taken and made gradient out of it to provide the product background. Such enriched UI also helped to make this application great.

Thus, the traditional online shopping is enhanced with latest technologies. Hope you liked it!



Akil Vishnu M

Balasubramaniam M

Venkat Karthick P



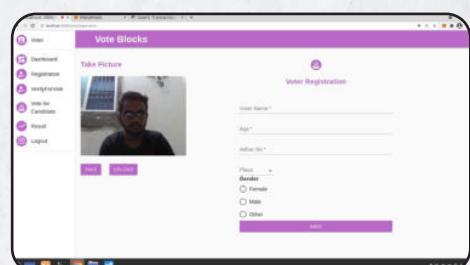
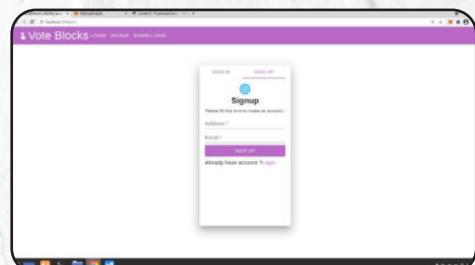
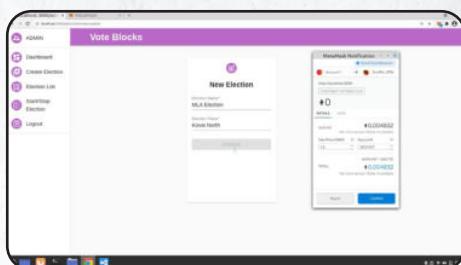
Voteblocks

Elections, referenda, and polls are very important processes and tools for the smooth operation of modern democracy. Some of the key considerations from the voters' perspective are choice of the candidate must remain secret, vote counting should be public and accountable but at the same time should be inaccessible during the voting period, tamper-proof by a third party, and maintaining social distance.

Problems with software-based voting systems are a single voting server would not be able to handle the load from many votes being placed at once. We would need to use sharding or allow voters to place votes to one of many servers. As the number of voting servers increases, it becomes more difficult to ensure that no duplicate votes are placed across servers and an attacker could spoof a voting machine's signature over the network and place unauthorized votes.

To protect the virtue of democracy in our country, we would work on creating a web app that uses Ethereum Blockchain technology. There are two primary sections in this system: The voter section and the Admin section. In the voter section, the voter casts his vote for the candidate. In the admin section, the admin can create elections, begin/stop the elections, add candidates, and control the whole election process.

Technologies used to build the web app are Ethereum, Blockchain, Solidity, Metamask, React js, Next js, and CSS.





Resume Building Workshop

Any educational institution, corporate company or industry wishes to have technically proficient and good valued candidate in their environment. The organisations hire candidates those who fit them through interviews.

Resume is an important document for any individual seeking for job or applying for any higher studies. It is the one that introduces the candidate to the interviewer before actually both meet in person. Sometimes, resume become the initial selection criteria for further rounds of hiring. So, a resume should standout and has to convey the exact talents and skills of the candidate.

ISTA conducted a Resume Building Workshop on 1st December 2021. This session was conducted in online mode, but yes, ISTA did it and reached a lot of students. Though students were busy with their regular classes and labs, most attended and make good use of it. Around 5pm, the workshop began. This session was conducted by **Mr. Jayaprakash**, Senior software engineer, Accolite Digital Pvt Ltd. He is an alumnus of Department of Information Science and Technology(DIST) who belonged to 2020 batch. He has been in the hiring team of the company. Along side, **Mr. Abishek**, Developer Associate at SAP labs presented the workshop. He belonged 2021 batch.

There were 74 attendees from second and third years of DIST. The workshop started with the topic “Importance of Resume” and it lasted for 90 minutes with various topics with utmost interactivity. As one of the presenters was in the hiring team, he put more points from the interviewer’s point of view. From the company’s view, how the candidate should behave and what they expect from the candidate for hiring. “A fresher’s resume should be limited to a **single page**. If you can’t fit your content in a single page you may start a **second page** but compiling into a single page is highly suggested”, said Mr.Jayaprakash. Interviewer will have a glance at the resume.

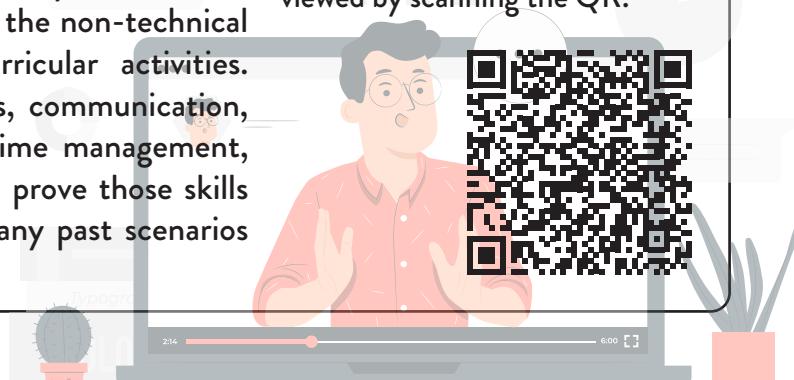
The presenters said that the candidate should mention the **level of proficiency** in each skill they add in the resume and that would help the interviewer to get better insight about the candidate and throw questions according to the level of proficiency. They also added that contents related to projects and others should be short and crisp which helps the interviewer to quickly understand about the content. Also, Candidates should add not only the technical skills but also the non-technical and extra-curricular activities. For soft skills, communication, team work, time management, it is better to prove those skills by narrating any past scenarios in interviews.

“Don’t lie in resume – People may add false information or exaggerate a skill more than their actual proficiency. The resume should contain no false information about the candidate which may lead them to an unknown path in the interview process”, said Mr.Jayaprakash. It is highly necessary to put points that you actually done and are actually capable of. **“Be genuine and straight forward to answer any of the questions posted during interview”,** said Mr. Abishek. He also shared his experience, how genuine he had been in one of his interviews and how he cracked the same. Finally, there was a Q/A session between the presenters and the students where students threw all their doubts and got it cleared by the presenters.

ISTA received positive feedback from all the students who attended the workshop. Hope this made an impact in the students’ entry to their career.

-Balasubramaniam M
Final Year, BTech IT

The recording of the session can be viewed by scanning the QR.



1

Morgan Stanley



LARSEN & TOUBRO

LTI

FULL

IBM

SOCIETE GENERALE

FOOD HUB

equitas

Shares of Equitas Holdings To List on 21st April
Allocation ratio fixed at 8:10.

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5

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11

Mphasis
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4

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SIEMENS

LISTER
technologies

verizon✓

6

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9

CITICORP®

Total number of students placed:103

ISTA is delighted to inform that this year our department has attained the **highest placement count** ever in the history of IST department.

LOG4J

What if I told you that you can send just a string of data to a computer and completely take control of it? That is precisely what happened with Log4Shell, a vulnerability that has recently been discovered and disclosed to the public in December. The vulnerability has been known to affect virtually almost every Java application there is on the Internet. It is found to even affect a lot of tech giants like Google, Amazon, Tesla, Apple, Steam, etc. and has been called as “the most critical vulnerabilities of the last decade”. So what exactly is this bug and why does it have so much impact?

To know more, let's travel back in time to 2001, when a Java-based logging utility called Log4j was released. It allows users to log data within their applications. Over time, the software became part of Apache Logging Services and started being used universally across all Java applications.

Log4J can be configured to log all sorts of data but let us look into some of the features of Log4J and some other factors that lead ultimately to the vulnerability of the decade. Log4J has a feature called “Lookups”, which is described by the documentation pages as “a way to add values to the Log4j configuration at arbitrary places”. For example, if there is a string of the format \$\$\{date:MM-dd-yyyy\} that is going into the

Log4J for logging, Log4J makes a lookup for the current date and adds it in MM-dd-yyyy format in the log.

Now let's move the timeline further to 2013, when a new feature was added to Log4J to make JNDI lookups. The Java Naming and Directory Interface is a Java API that provides naming and directory functionality to Java apps. It is defined to be able to be used across a variety of directory service implementations. Now, one of the directory protocols supported by JNDI is Lightweight Directory Access Protocol(LDAP), which makes it possible for apps to rapidly query data. Yeah yeah, I can feel you zoning out with all the jargons and abbreviations, but bear with me please.

So in 2016, there was a research presented at BlackHat, which is one of the biggest hacker conferences on the planet. The research was titled “A journey from JNDI/LDAP Manipulation to Remote Code Execution Dream Land” and explained how JNDI, a feature called Java Serialization and LDAP can lead to Remote Code Execution. For a bit more insight, Remote Code Execution (RCE) is when you can execute any code on someone else's machine, meaning you basically have full control over their computer. Now connecting the dots, we can see that (untrusted JNDI/LDAP lookups) = bad, which is exactly

what finally led to the Log4Shell vulnerability.

You may be asking “If it was known to be bad in 2016, why use it till 5 years later?”. Well, you know, Java being Java is known to have tons of issues like this because of the feature called “Serialization”. Most of the Java Remote Code Execution vulnerabilities have occurred as the result of this feature in Java. Since it is very common to find, the research was not paid much attention to and dismissed as “Just another Java Deserialization vulnerability”. Also this research had no relationship to Log4J.

Only in November 2021 did a person from Alibaba Security team find that the very commonly used Log4J was vulnerable to the arbitrary deserialization issue that was discussed at the conference in 2016. Since this Log4J logger is used by most of the internet, the entirety of the apps using this got nuked.

TL;DR Log4J used JNDI Lookups -> JNDI lookups allowed LDAP -> All these used Java -> Java allows Serialization/Deserialization of objects -> JNDI/LDAP vulnerable to RCE because of Deserialization -> Log4J vulnerable to RCE (Dubbed Log4Shell) -> Most of the Java apps use Log4J for logging and so got nuked

-Naveen Prakaasham K S V
Third year, BTech IT

Creative Role Behind Strategic Play



freshworks

From working a comfortable 9-5 corporate job and living a sustainable life to having an insane idea due to a shattered TV, Girish Mathrubootham the Founder and CEO of Freshworks has a riveting life story.

Freshworks started as Freshdesk in 2010. Back in the day Girish Mathrubootham worked in Austin, Texas and when he moved back to Chennai, he noticed that his TV had unfortunately broken during the shipping. Luckily the TV was under insurance, and he thought it would be a fairly simple process to collect the money. But even after 5 months of continuous calls and emails to the insurance company's front desk he was unable to avail the money. So, in early 2010 he shared his story on an online forum called "Return to India" and the community started engaging. The following day the president of the insurance company apologized, and the money was transferred to his account. Girish Mathrubootham realized he had just witnessed a paradigm shift in the balance of power, and this sparked an idea. With in-depth knowledge in the domain, he decided he should build something in the customer support market delivered as SaaS (Software as a Service). SaaS allows users to connect to and use cloud-based apps over the internet. So, he founded a helpdesk that takes care of customer enquiries not only through phone and email but also through social media platforms like Twitter and Facebook.

Freshdesk is an online cloud-based customer support software providing help desk support with all smart automations to get things done faster. Freshdesk uses Ruby on Rails as the backend server technology and Ember is the framework used to develop web applications. It offers customer service remotely, automates workflow routines, has a clean and easy to navigate UI and transparent pricing. Because of this it has remained a popular choice for businesses that want to increase customer engagement and manage customers as they scale. In 2017, helpdesk software company Freshdesk rebranded and changed its name to Freshworks. When asked if people would be wrong to view this rebranding as a mark against the original Freshdesk name, Freshworks President Dilawar Syed replied, "This is not a retreat...This move affirms our aggressive mission of broadening the business."

Freshworks works as an umbrella brand and offers multiple products. They are Freshdesk, Freshservice(a cloud based IT Help Desk and service management solution that enables organizations to simplify their IT operations), Freshsales(a cloud based CRM solution that helps businesses across different industry vehicles to manage their interactions with customers) and Freshcaller(a fully functional call center on the cloud). Freshworks has recently been investing in Java-based microservices to extend Freshdesk's functionalities and it

has proven to be cost-effective and impactful. They use MySQL as the primary transactional database and Redis for caching. They have also incorporated AI/ML to automate the workflow. By doing so, the need for human input has decreased significantly. This has become Freshworks' areas of expertise.

Freshworks, which created history by becoming the first Indian SaaS company to get listed on the Nasdaq stock exchange, has seen more than 500 of its employees in India becoming crorepatis in the process. In September 2021, Freshworks raised over USD 1 billion from the IPO. The stock made its debut on at USD 43.5 per share on the Nasdaq, up 21 per cent from the listing price of USD 36. Today, Freshworks is a global business with more than 50,000 customers, revenues more than USD 300 million, and serving a market opportunity of more than USD 120 billion.

In this competitive world, unconventional and original ideas have taken the front seat. To survive and thrive, companies must diversify and integrate. Freshworks strictly went by the book and have flourished due to this. They had creative ideas and did not hold back. Strategic implementation steered them to success.

-Jovina Virgin
Second Year, BTech IT

Tech'Sposure - Machine Learning

Introduction:

Artificial Intelligence is the technology that enables machines to simulate human behaviours. They are not explicitly programmed rather they learn from past behaviours and trends. Machine Learning is one of the branches in AI that allows machines to process large volume of data quickly. It helps computers to learn and improve from experience by performing tasks like prediction and detection using algorithms.

Working:

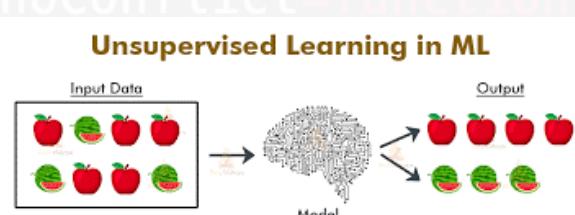
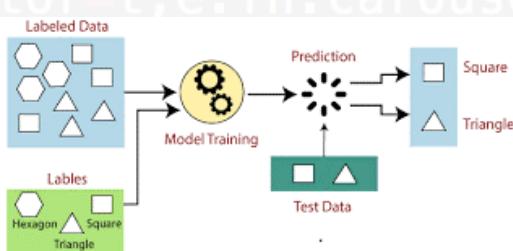
Machine learning uses data to learn behaviours and patterns. The learning happens through iterations. In the youtube homepage, we tend to see videos recommended for us. It uses Machine learning. The history of all users (data) are analysed using ML algorithm and based on the results provided by those algorithm we get videos related to the content we watched before. Machine learning happens in two phases - training and testing phase. In training phase, the input data is fed to an algorithm. The algorithm (model) completes the task of learning by finding patterns. This model is now tested against new data to make predictions. If the predictions and the original result of new data don't match, the algorithm is re-trained until it makes predictions close to the results.

Types of Machine Learning:

Machine learning is primarily divided into 2 main categories.

1. Supervised Learning
2. Unsupervised Learning

In supervised learning the labelled data are fed as input to the algorithm. Once the model is trained on the known data, we give a set of new unknown data to identify its labels. The machine learning algorithm makes predictions on unknown data.



Here the data are labelled as hexagon, square and triangle. The model is trained on these labelled data and when given new test data without labels, it predicts the label of test data. Here the shapes are correctly predicted as square and triangle.

In Unsupervised learning, the data are not labelled.

The data above are not labelled; rather when a group of data is provided as input to the machine learning algorithm, it tries to cluster the similar objects together by identifying patterns. Here the apples are in one group while watermelon in another group.

Machine Learning use cases:

Self driving cars use machine learning algorithms to identify traffic lights and sign boards. When the dataset with labelled traffic lights and signs are given, it predicts the same in real time.

Facebook friend recommendation uses unsupervised learning. The users are grouped together based on the activity. If we send a friend request to one of the users in a group, all the other users in the same group are seen in our recommended friend list.

Degree in machine learning:

Machine learning engineering roles require at least a Bachelor's degree in computer science, statistics or mathematics and candidates from other branches require some hands-on ML exposure to get jobs. Maths and statistics form the base of ML. Many pursue masters in machine learning, computer vision, natural language processing. To pursue masters in India one has to clear GATE which can be attempted from 3rd year onwards. GATE is conducted once in a year. GATE scores are valid for 3 years. To pursue masters abroad one has to clear GRE which can be taken anytime and in any year. The validity of GRE is 5 years. In addition to above one has to clear either TOEFL or IELTS to pursue masters in abroad which also can be taken anytime in any year. The validity of TOEFL/IELTS is 2 years.

Jobs:

The successful candidates get job as Data Scientist, Machine Learning Engineer, Computer Vision Engineer etc. The prerequisites for most of the jobs are, one should be good in data structure and algorithms, should have known either Python /R .In addition to above one should know basics of calculus, linear algebra, statistics, probability, databases (SQL /NOSQL). If one wishes to practice machine learning with hardware, Robotics and Space technology (NASA/ISRO) can do the favour.

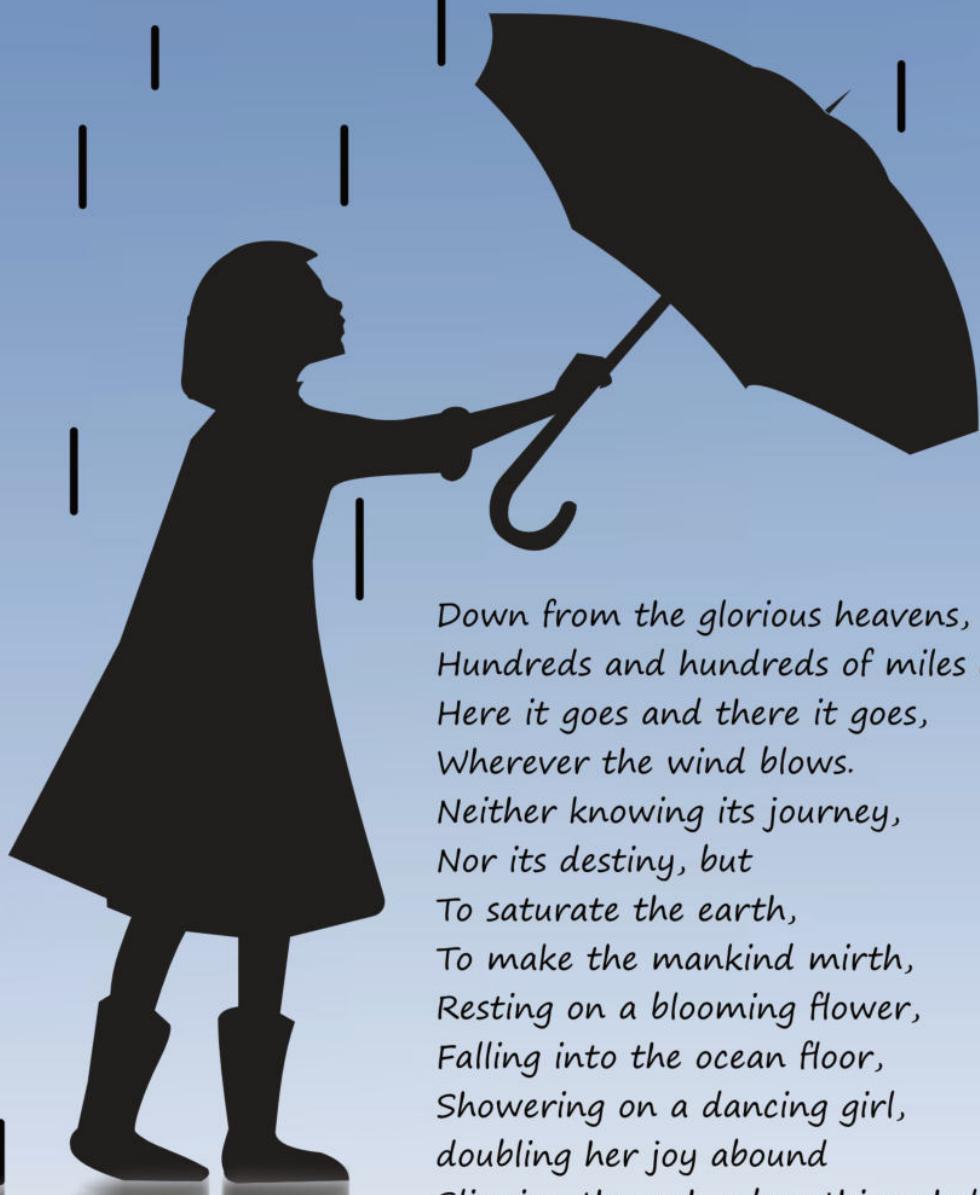
Conclusion:

Machine learning is quickly growing in the field of computer science. It has application in almost every field of study because it can solve tasks that are time consuming for humans. Data forms the base of ML. In this technology world, the quantum of data is increasing exponentially. New insights, discoveries are yet to happen with the amount of data available. It will be exciting to see how machine learning transform our life in next 10 years.

-Ragavendra Ramanan M R
Final Year, BTech, IT



VOYAGE OF A RAIN DROP



Down from the glorious heavens,
Hundreds and hundreds of miles abroad.
Here it goes and there it goes,
Wherever the wind blows.
Neither knowing its journey,
Nor its destiny, but
To saturate the earth,
To make the mankind mirth,
Resting on a blooming flower,
Falling into the ocean floor,
Showering on a dancing girl,
doubling her joy abound
Slipping through a breathing shell,
Transforming to a gorgeous pearl.
It keeps moving ahead,
Not turning its head.
No worries in its entire life,
No hurries to end up in strife.
Setting up for each new voyage
Working restlessly throughout its age,
From beginning of magnificent creation,
Its eternal journey needs no salvation.

- Selshia Teresa
Final Year, BTech IT

Capture the Flag (CTF)

Here we are in 2022, the hacker has hacked into ISTA again. The flag was broken into three pieces and encoded with a magic spell called "PEM encoding". He sabotaged ISTA's new year greetings. Explore the website and restore the flag.

Do you want a clue? Don't worry it will be updated on February 30.

Create an account on tryhackme.com

Access the tryhackme room via either

<https://tryhackme.com/room/istajanuaryctf2022>

Or

<https://tryhackme.com/jr/istajanuaryctf2022>

Find the flag! (format "ISTA_CTF{.....})



Puzzle by,
Balaji Anbalagan
Seceond Year,BTech IT

Ahoy ser...up for a trip...

Read the rules below...

RULES:

1. A knight will be positioned at square 1. And as you already know a knight can move 2 squares forward and one square at right angles to the previous path, in either of the 2 sides in a chessboard.
2. So, the knight must start from square 1 and end up again on square 1, after standing on each square atmost once, thus completing a closed tour. (through legal knight moves only)

Start your journey!

Salutes ser, if you've found the right path! But this is not done yet...

There are 4 possible closed tours for a knight from square 1. Find the rest 3 and there's something curious, in store for you.

Now that you're done with your trip,

you've been asked to go on a hunt in search of a word...

Now if one of your solutions is...for ex: (not the correct one)
1-5-2-8-4-11-9-12-3-7-10-6-1

Then match these numbers with their corresponding alphabets and make a table as below... Do the same for the rest 3 solutions too.

A	B	C	D	E	F	G	H	I	J	K	L
A	E	B	H	D	K	I	L	C	G	J	F

Using this you've to decode the given word...Obviously for 4 solutions you're gonna get 4 decoded words... The meaningful one will be the word you're looking for.

Your coded word is GIAKJ...You're all set to begin your new adventure, now

Walk and Stalk

	1		2
3		4	5
	7	8	9
		11	10
			12

Puzzle by,
Edumba Vannia Raja T
Seceond Year,BTech IT

Harry Potter Reunion

It's been 20 years since JK Rowling won over the hearts of teens with her Harry Potter series. Ever since, fans have fantasized about receiving their own magical invitation to board the Hogwarts Express and making their way to the lush, green, mystical meadows of Hogwarts. Reading Harry Potter has always been comforting. The books just seem to take us to a completely different world, a world we all wish was real. We tend to believe that Hogwarts is our home too and perhaps one day Expelliarmus will not just remove your opponent's wand, but also eliminate all our real-life problems. But the series already does that, when you open up a Harry Potter book, you forget all your worries and go on a roller coaster ride - of magic, love, friendship, sacrifice, and loss. The highs and lows of the books are so perfectly timed and everything is very well connected. The readers receive a strong message upon completing the series, that nothing is greater than love.



The movies capture the essence of the books like no other. Harry being there for Harry throughout the series, Tom Felton's portrayal of the spoilt Draco, Snape's swagger and over-pronouncing of every single word, Neville's transformation from an awkward young kid to a confident leader, Fred and George's practical jokes, Harry, Ron, and of course Dobby's sacrifice 💔💔 are a few unforgettable moments from the movie franchise.

For one last time, we get to witness the cast(almost all of them-Snape fans where you at 😭😭😭😭) come together to work their magic on us. Harry Potter 20th Anniversary: Return to Hogwarts will premiere on HBO Max on New Year's Day, Jan. 1, 2022. This will certainly make 2022 a Happy New Year for a lot of Potterheads.

- Aswin ramanathan
Second Year, BTech IT

Role of Analytics and Visualizations in the Modern Software Industry



We have witnessed a more growing need for analytics in corporate markets as with evident information with data in various forms can stakeholders be made aware of choices and decisions to take moving forwards. These corporate organizations often employ business interactive analytics techniques to help with the decision-making process.

Organizations employ analytics so they can make data-driven decisions. Business analytics gives businesses an excellent overview and insight on how companies can become more efficient, and these insights will enable such businesses to optimize and automate their processes. It is no surprise that data-driven companies, also make use of business analytics usually outperform their contemporaries. The reason for this is that the insights gained via business analytics enable them to; understand why specific results are achieved, explore more effective business processes, and even predict the likelihood of certain results.

Business analytics also offers adequate support and

coverage for businesses that are looking to make the right proactive decisions. Business analytics also allows organizations to automate their entire decision-making process, so as to deliver real-time responses when needed.

One of the apparent importance of business analytics is the fact that it helps to gain essential business insights. It does this by presenting the right data to work it. This goes a long way in making decision-making more efficient, but also easy.

Efficiency is one area of analytics that helps any organization to achieve immediately. Since its inception, business analytics have played a key role in helping business improve their efficiency. Business analytics collates a considerable volume of data in a timely manner, and also in a way that it can easily be analyzed. This allows businesses to make the right decisions faster. Analytics and Visualizations help organizations to reduce risks. By helping them make the right decisions based on available data such as customer preferences, trends, and so on, it can

help businesses to curtail short and long-term risks moving forward.

Tools often used to deal with data analytics and visualizations in the modern landscape involve Tableau, PowerBI, Excel, Datacharter, and Infogram. With the help of these data visualization tools, we are enabled to depict stories of information for various types of stakeholders can retain maximum information from the data shown pictorially. Data can be normalized and can be introspected deeply to gain meaningful insight which we would struggle to do in a normal scenario. As discussed earlier, these tools are extremely necessary and are used in various domains such as sports, businesses, and can even be used for personal recreation purposes. Why don't you give it a try? It might help your own decision-making!

-Kevin Paul
Final Year, BTech IT

Photographed by,

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Gray Crowned Crane

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