



CACHE

presented by



“Learn,
Unlearn,
Relearn”

**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

The Department of Information Science and Technology pledges to educate students with conceptual knowledge and technical skills to forge ahead in the field of IT, while inculcating deep moral and ethical values to achieve excellence, by providing a vibrant academic and research environment in collaboration with industry.

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 produce 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 initiatives are,

- > CACHE is our new initiative to represent and uphold the IT department as a whole among CEG's various other departments. This issue is the Fourth edition of CACHE.
- > Our Internship and Placement training groups to train our students to perform well in the Campus placements and Internship drives are going good.
- > The Team is closely working on making websites for ISTA, ITrix'22 and Chamber of Secrets and will be released soon.
- > We are proud to acknowledge that our intra college symposium - I++ has been a huge success and have started the works for ITrix'22.
- > Hackofista'22 will be considered as a part of ITrix'22 and will be conducted a week prior to ITrix'22.

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



I
S
T
INFORMATION
SCIENCE &
TECHNOLOGY
ASSOCIATION



ISTA's signature inter-college symposium

ITRIX 22
TESTING THE LIMITS

May 5, 6, 7 - 2022
Stay Tuned...

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Art by
Rose Mary Varghese
Final Year, B.Tech IT



Rose
2022

Interview with Vidhoon Viswanathan

Vidhoon Viswanathan is a 2011 batch alumnus of the department of Information Science and Technology. He did his intern at University of Victoria In Canada and then worked as a Software engineer at Texas Instruments in Bengaluru. After working there for 2 years, in 2013 he pursued his Masters degree in Computer Science in the University of Texas at Austin, US. After that he worked as a Software Engineer in Microsoft for 3 years. Currently, he works as a Software Engineer at Facebook.



Vidhoon Viswanathan
IT - Batch'11, CEG

When did you decide to pursue your masters? Is it when you were doing final years or even before that ?

When I was doing my second year I spoke with my Computer Science seniors and got a clear idea about doing masters abroad. That was the first time I decided to masters.

For pursuing masters in abroad as we all know you should have written some exams.. Can you elaborate on it and also the preparation you did for it?

Speaking of exams, for pursuing masters abroad you should clear GRE and TOEFL exams with a higher percentage. You know, it needs a lot of preparation and I undertook a lot of mock tests regularly. As far as I have noticed, people with the American accent are very comfortable in clearing these exams whereas undergraduates with more of an Indian English accent, need a lot of practice. And one more thing, your flow of English must be fluent. Like if you stammer while speaking, it'll

impact your scores in these exams. Make sure you're capable of preparing well for these exams before registering for it, because the exam fee is fairly high.

What are the characteristics that these universities are looking for in UG graduates? Please tell us your opinion.

According to me, the first thing I'll ask you all is to be strong on the core concepts. The concepts I had to focus on were operating systems, machine learning, artificial intelligence and so on. The second thing is having a good score in GRE and TOEFL exams. The third thing is your CGPA. It's not like if you have a good CGPA you'll be selected in these universities. Even the higher the CGPA you have, if you have poor GRE and TOEFL scores, you'll be snubbed.

I saw in your linkedIN profile that you had done your intern at the University of Victoria in Canada.. And you had also worked with Dr. Jianping Pan... You would've got a

lot of internship opportunities from a myriad of universities and corporates. Can you please tell what influenced your decision to select University of Victoria?

Yeah. I did get a lot of opportunities from other universities as well, but I was keen on choosing the University of Victoria in Canada, because of my personal interest to masters in a foreign country and to have an idea what it's like to lead life in Northern America.

Can you share your experience about your internship in University of Victoria?

At UVic, I worked on Vehicular ad hoc networks - to improve upload transmission capability from moving objects like cars to fixed access points. This is instrumental for autonomous cars that depend on communication with their cloud server to make critical decisions. I worked under Dr Pan and another graduate student on this problem and published a journal at the end of my internship.

You would have got job opportunities after UG. What was your thought to do masters instead of taking up the job ?

Actually, I didn't do Masters exactly after my UG course. I got a job as an Software Design Engineer in Texas Instrumen-

ts, Bengaluru and did the job for 2 years. It was after that, I went on to do masters. I did so, because I thought it would contribute to my experience, if I work on a job for a couple of years. And I would like to suggest you all the same.

Lastly.. Do you have any specific advice for the ongoing UG students who are aspiring to do masters abroad?

Basically, I would say that it is beneficial for everyone to do Masters abroad at any point in your life. Because, there learning will be more of a practical one compared to Indian universities. But it depends on your financial situation also. Now if you are learning through educational loan , I would suggest you to do a job which you've achieved through your UG course, for a few years. And then when you think you'll be capable of handling the finance required for the masters, you can go for it. If you're on the other side, then go for it without a second thought, but still a preliminary job experience also matters. But make sure it doesn't cost you a lot of time, since you'll attain other life duties which will make it difficult for you to meet both the ends.

Interviewed by,
Edumba Vannia Raja
Second year, B.Tech IT



Project Works

FEED THE NEED

While going through sustainable goals 2021, we found eliminating poverty, erasing hunger which should be solved immediately and it's one of the major concerns in developing countries like INDIA. Main reason for this problem is lack of money and wasting unused excess food. So we thought to develop an application which allows restaurant to give excess food at certain discounts and also for free to verified NGO where they can donate it to needy.

Main idea behind our app is to reduce food waste in restaurants and hotel and provide this food to people who can't afford them via NGOs and charities for free. And also we are trying to build a fund-raising module which enables normal user to donate money to NGO.

Instead of giving waste

products at certain offer rate we decided to separate users into two categories :

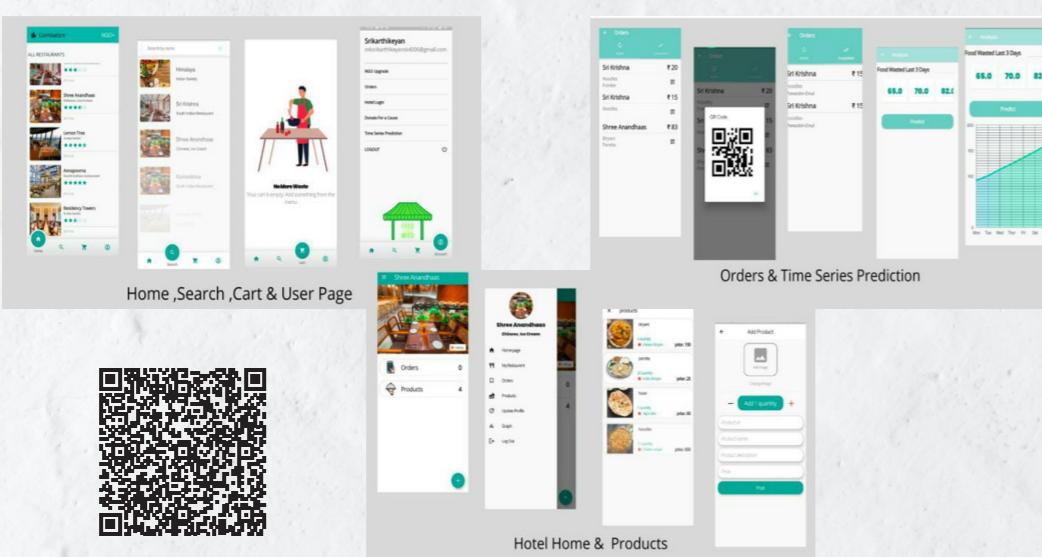
- Normal App Users
- NGO User

Normal user gets 50% off while an NGO will get 100% off on the product by this we can generate revenue and also donate excess food to the Need.

Also with all this data generated (like food quantity, More excess item) we give some insights to users and hotel admins through some analysis like time series prediction and food analysis. Time series prediction involves uses of tflite converted LSTM model to predict unused food for the next 7 days based on food wasted for the past 3 days which act as an input. We also get averages estimate of unused

food quantity for next 7 days. Food analysis provides two graphical representation (bar chart and line chart). Bar chart represent the amount of excess food currently remaining in that particular day. Line chart represents the excess food cooked by the restaurant for the past 30 days.

Food waste in country like India is a huge concern and there is no proper system to manage it. Once we try to solve this problem, poverty and hunger will be eliminated to some extent according to use. So we are happy to conclude that we have done something which will be useful for our country and feed lots of hungry people. We have developed this app which can be used real time and its platform independent allowing all people with a mobile phone to use our application.



Kannathasan E



Pravinbabu B



Srikarthikeyan MK

SIGN LANGUAGE RECOGNIZER

There is an undeniable communication problem between the deaf community and the hearing majority. Innovations in automatic sign language recognition try to tear down this communication barrier. Hand gesture recognition serves as a key for overcoming many difficulties and providing convenience for human life. The ability of machines to understand human activities and their meaning can be utilized in a vast array of applications. One specific field of interest is sign language recognition.

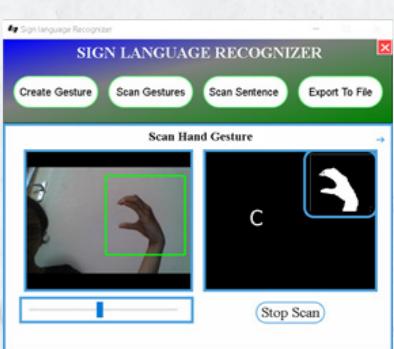
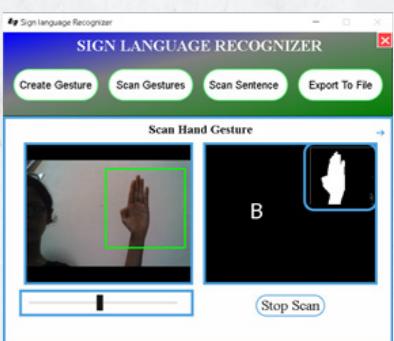
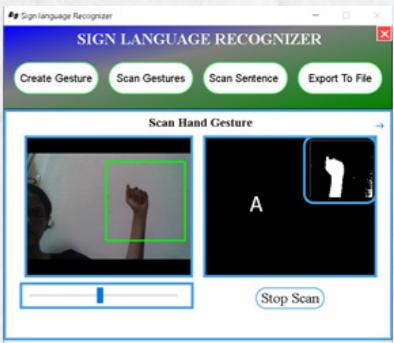
This project aims to build an American Sign Language (ASL) hand gesture recognizer using Machine Learning (ML) techniques. The goal is to assist speech-disabled people in learning and communicating the alphabet. It detects the hand gesture of the user in real-time and makes a prediction. In addition to this, there are other user-friendly features that make this application a true learning platform.

The user can add hand gestures of his/her own choice, to the existing dataset. The application is also capable of de-

tecting multiple hand signs at one scan using the "stream of hand gestures" feature. It also enables the user to save the scanned detection in their system using the "export" option.

This application serves users who want to learn and talk in American Sign Language. And users don't require prior knowledge on American Sign Language to make effective use of this application, since it aims to be a complete learning platform.

American Sign Language Dataset is used, and the recognizer is built using Convolutional Neural Networks Model. We make use of the open-source library for computer vision OpenCV to identify and process the user hand gesture. Other prerequisites include Tensorflow, Keras, SciPy, and PyQt5. Once the SLR is built using ML, it is deployed on a user-friendly interface designed using PyQt5.



Subhadharshini K



Vishali M



Vishalini V



GROWW

Creative Role Behind Strategic Play

Back in the day, before the advent of technology, people generally approached a financial advisor to proceed with their investments. This wasn't the best way to handle the situation. After people started wildly using the internet, multiple trading platforms were built. Investment platforms are online services that allow users to buy and hold shares, bonds, and funds all in one place. One such popular platform is Groww.

Groww is a Bangalore-based company that was started by four ex-Flipkart employees, Lalit Keshre, Harsh Jain, Ishan Bansal, and Neeraj Singh in 2016. During their time at Flipkart, they witnessed the changes in the e-commerce market and realized that investment was the next big opportunity. Groww helps users to invest in Equity, IPO, and Direct Mutual Funds. Next billion Technology Private Limited is the parent company of it. So, what makes Groww unique? Well, it was a shot to make the process of investing, which is generally complex and vague, much more simple. It is also the first Indian fintech company to offer mutual fund direct access where users have full access to their portfolio. It is the Least Fee Charging Mutual Fund and Stockbroker Company. Right now, it has around 200 million customers, a 4.6 rating and a team comprising of over 500 members.

Groww had a very different approach while framing its business model. They went with the

DIY (Do It yourself) model which was very much appreciated by the Gen Z community of today. This enables investors to individually invest and manage their investment portfolios without the need for any third party. Groww's goal was to provide consumers with a transparent and easily understandable process, and they succeeded in doing so. Another important feature of Groww is their Demat accounts. A Demat Account (Dematerialized account) helps investors hold shares and securities in an electronic format, making it easy to maintain and access them from anywhere. Groww uses AI/ML in image processing, automating manual workflows, reducing errors and increasing user ease throughout the journey. Besides this, its tech stack includes React Native, Springboot, and Spring-Cloud, and a microservices-based architecture that allows it to scale.

Groww offers various products a customer can invest in. They include Mutual Funds, Stocks, Futures and Options, US Stocks, IPO, and Fixed Deposits. In mutual funds, there are two types of investments Regular and Direct. In the conventional Regular mode, the user has to buy mutual funds through their distributor who will charge a particular commission sum for the service. This commission amount will compensate for the investment and profit. But Groww is a direct investment platform. This enables users to choose from multiple mutual funds and stocks on a single platform, thereby removing the concept of finan-

cial consultants. Then how does Groww make its money? Groww mainly makes its money by providing premium features such as advisory services on investment and portfolio.

Groww is backed by world-class investors like TigerGlobal, Propel Venture Partners, Ribbit Capital, and Sequoia. The consolidated revenue rose to Rs 40.4 crores in the fiscal year 2021 from Rs 2.9 crores in FY20 which is a 14-fold increase. The majority revenue came in from brokerages and allied services income which rose from Rs 2.9 crores in FY20 to Rs 34.7 crores in FY21. As of lately, Satya Nadella, the CEO of Microsoft, has invested in Groww. "Groww gets one of the world's best CEOs as an investor and advisor. Thrilled to have @satyanadella join us in our mission to make financial services accessible in India," Groww Co-founder and CEO Lalit Keshre said in a Twitter post.

Groww's team, at a very early stage, understood the upcoming boom in the field of trading and investments. They seized this opportunity and hitched a ride to success on it. They worked day in and day out to create products that would cater to the various needs of their users. This has been welcomed by users all over the globe and has sparked the interest to invest wisely!

-Jovina Virgin
Second Year, BTech IT

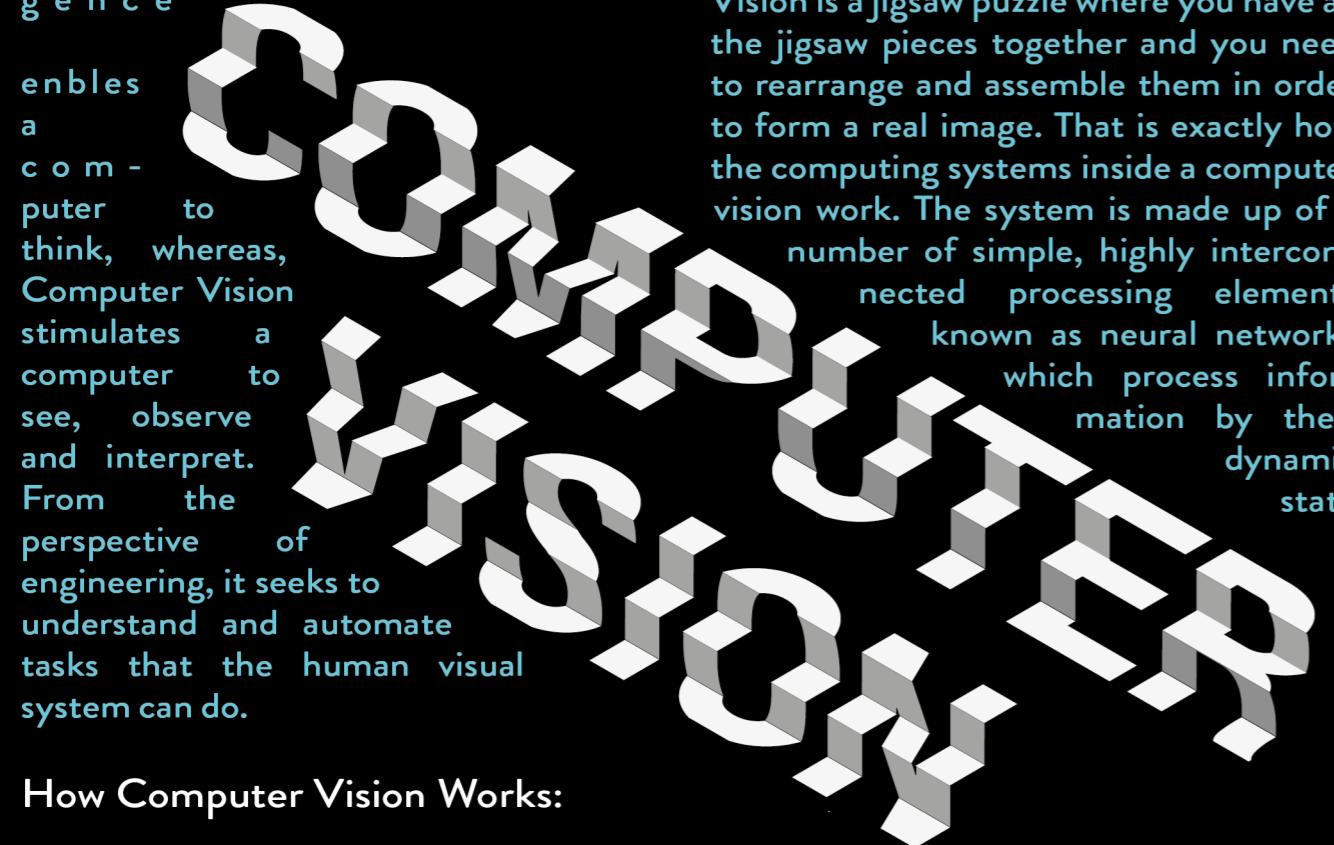
PLACEMENT STATS



Total number of students placed : 106

Numbers in the box indicates the number of students placed in each company
February 2022 | annauniv.edu/DIST

Computer vision is an interdisciplinary scientific branch of artificial intelligence that trains and gives computers the ability to understand the visual world. It deals with how a computers can gain high-level understanding from digital data or media: can be images, video streams or any other visual inputs and take actions or make recommendations based on the sample information. Artificial Intelligence



How Computer Vision Works:

The working model of Computer Vision works can be related with that of our normal human vision, except the fact that human vision requires a head start. Also, Human Vision has the advantage of lifetimes of context and data that can be fed into the brain to train how to recognise and differentiate objects apart, how far away they are, whether they are moving and whether there is something wrong in an image.

Computer Vision, in a similar way, trains a machine to perform these functions, but in much less time with digital resources like cameras, data

and algorithms rather than the natural retinas, optic nerves and a visual cortex as in Human Vision. Computer Vision can quickly surpass human capabilities because a system trained to inspect product information can analyse thousands of products or processes a minute along with spotting imperceptible defects.

Another real-world example that can be related to the working of Computer Vision is a jigsaw puzzle where you have all the jigsaw pieces together and you need to rearrange and assemble them in order to form a real image. That is exactly how the computing systems inside a computer vision work. The system is made up of a number of simple, highly interconnected processing elements known as neural networks which process information by their dynamic state

response to external inputs. They are referred to as neural networks as they work similar to the functioning of brain nerve cells (neurons). A series of filtering is done where the computers can put all the parts of the image together and then think on their own. However, the computer is not just given a puzzle of a picture. It is modelled with thousands of sample images that train it to recognize certain objects.

Computer Vision Algorithms:

In computer vision, a well-defined set of algorithms are required to find the following:

- To which category the object in the image belongs to? (Object Identification)
- Where the object or entity is located in the image? (Object Detection Algorithm)
- How far the object is located from the place of capture of an image? (Object Distance Estimation Algorithm)
- Which pixels in the image belong to the given entity? (Object Segmentation Algorithm)
- Is the given entity present in the picture? (Object Verification Algorithm)
- What are the objects present in this photograph and where are they located? (Object Recognition Algorithm)
- What are the key points for the object in this photograph? (Object Landmark Detection Algorithm)

Computer Vision Tasks:

1) Object Classification:
It involves formulating a system which would accept a sample image as input and predict what type of object it is by using the pre-defined set of classes framed by the computer with the data it already knows.



2) Object Classification + Localisation:
Once object classification categorises the entity in the image into a group, object localisation finds the region in the image where the entity is located and surrounds it with a bounding rectangular box.

3) Object Detection:
This step is a combination of both 1) and 2)

where each object of interest in an image is bounded by a box with its corresponding class label.

4) Instance Segmentation:
This identifies each object instance for every known object in an image. It assigns a label to each pixel of the image and helps us know which pixels in the image contain that object rather than just a bounding box as in object detection.

Computer vision is a dynamically growing field in computer science which deals with real-time processing and understanding of visual information and thus finds its applications in face recognition, surveillance, image retrieval, biometrics, smart cars and what not. It is a highly versatile technology that can be adapted to various industries like manufacturing, defence, healthcare and security. In future, this technology with research on technology and persistent refinement will see it perform a broader range of functions. It would not only be easier to train computer vision models, but will also be able to decipher more and more data from the images than they do now.

- Ramya R
Second Year, B Tech IT



AFSPA

A Controversy in the face of extremism

"An object of hate and an instrument of discrimination and high handedness"
-Justice Jeevan Reddy Committee

Internal Security of a nation indirectly depends on the development and people. Among many factors, Underdevelopment is one of the most important factors for the growth of Extremism in a region. To reduce uncontrollable extremism in India, AFSPA (Armed Forces Special Power Act) comes into picture. The incident three months back on the Mon district of Nagaland had a major impact in the use of AFSPA in the region.

What is AFSPA?

- > Armed Forces Special Power Act was passed on 1958.
- > The main objective of the act is to suppress the extremism.

In the pre independent era, this act has been prevalent as Armed Forces Special Power Ordinance. It was also used to constrict violence during that era. The two main implementations of this act were on the occasion of

- > Quit India Movement, 1942
- > India Pakistan Partition, 1947

Each State had separate ordinances. After Independence, the central government sought the need for a common act all over the country. Thus, AFSPA came into action on 1958.

Disturbed Area:

Under Section 3 of the act, the Central Government or the Governor or the administrator of a Union Territory can declare an area as 'Disturbed Area' if the violence of

a state or a union territory is impossible to be controlled by the Civil Administration and the Police force of the State or Union, only with the acceptance of the State Government.

If an area is declared as Disturbed Area, the armed forces come into action and try to suppress the extremism. According to the Disturbed areas (Special Court) Act, 1976, if one such area is declared a 'Disturbed Area' then it shall remain as one for a minimum period of 3 months. If a state wants to revoke the act, it can only do so only after 3 months of its action.

Tripura State Government revoked the AFSPA after signing a peace pact with the Extremist group 'Tripura Lions'.

Controversy:

Under AFSPA, if local civilians are falsely identified and killed in an operation, the respective military personnel won't be entrusted with the Civilian Court. These types of cases will only be handled clandestinely by the Martial Court with the backing of the central government. The act also give the army the right to check and investigate without a warrant.

Considering the scenario of subjecting them to the open court, the punishment given to the accused will be an open statement. Even though they catch the correct group involved in extremism, the army will be hesitant to take the necessary actions. This will hinder the main motive of AFSPA.

Supporting the repeal of the Act:

There are various controversies given by highly authoritative people. Second ARC, Justice Verma Committee, Justice Hedge Committee, all wanted to repeal AFSPA. According to BP Jeevan Reddy Committee, AFSPA was stated as

"An object of hate and an instrument of discrimination and high handedness"

The only possible Solution:

The solution to the extremism is to increase the infrastructure and development of the involved area. For development, there is a need of private parties to invest in these areas. For private party investments, the peace and security of the region must be ensured by the Government.

- Adhis H
Final Year, BTech IT

Monika Poem

Freedom Of Senses

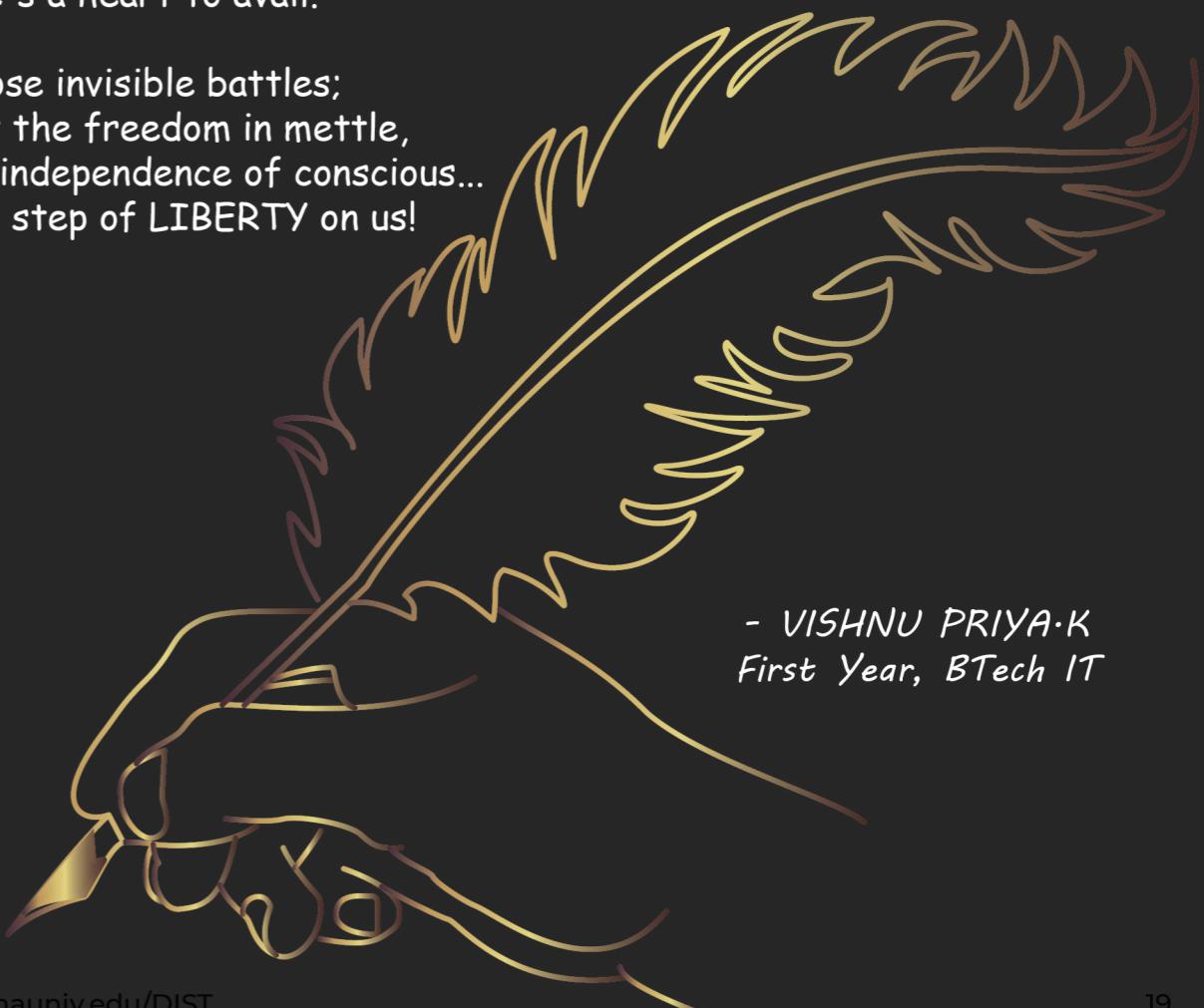
Into the green grasses, guided by snail
As if the senses were set free from jail !
Then started the startled mission,
Encountered everything with "AWE!" in vision.

Victim for the gone missing notice was found,
When the senses were settled away from bound.
A music is played past your headset;
Win the wisdom to hear it against gadget.

A story with no words
Orated by an illiterate bird.
To speak what you wish,
Let the tongue on its way to twist!

With a white weathering canvas,
Only paint and brush included in toss,
Why just head or tail?
When there's a heart to avail.

Fighting those invisible battles;
Figuring out the freedom in mettle,
Feeling the independence of conscious...
Is the First step of LIBERTY on us!



- VISHNU PRIYA·K
First Year, BTech IT



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