# IGNITE 2024



## A DAILY NEWSLETTER

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Dr. Srinivasan Alavandar Principal, ACT **Editors** 

Ms N Dhivya, AP - S&H

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#### PLACEMENT NEWS







Final year male students from the department of Biomedical Engineering attended Face-to-face Interview in the placement drive conducted by Greenland Medical Systems at company premises on 3<sup>rd</sup> February 2024. Greenland Medical system is a surgical equipment supplier.

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#### PLACEMENT NEWS





Final students from the departments vear of Mechanical, Mechanical & Automation, Mechatronics and Aerospace attended the placement drive conducted by **Kyunghin Industrial Motherson Pvt. Ltd.** on 5<sup>th</sup> January 2024 at Company premises. KYUNGSHIN INDUSTRIAL MOTHERSON LIMITED electrical/electronic is an manufacturing based company.





#### PLACEMENT NEWS



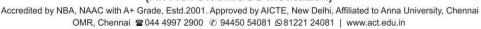






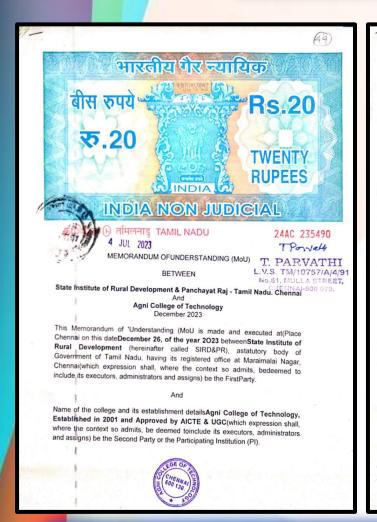
Final year students from the departments of Computer Science Engineering, Information Technology , Electronics and Communication, and Electrical and Electronics Communication attended placement drive conducted by **Vtiger Systems India Pvt ltd** on 5<sup>th</sup> January 2024. Vtiger is a leading Cloud CRM solution architected on an industry leading open source core.

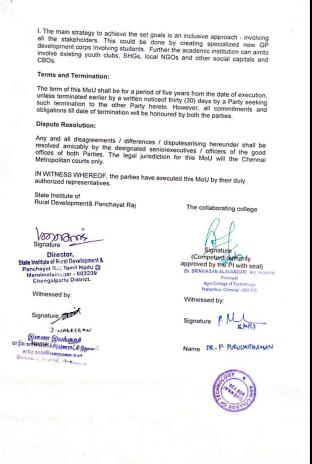




#### A DAILY NEWSLETTER

#### MOU





Agni College of Technology signed a MoU with the State Institute of Rural Development (SIRD) to support the adopted villages under the Unnat Bharat India scheme for achieving the Localized Sustainable Development goal. Dr. P. Purushothaman, Assistant Professor and Head, had taken the initiative to sign a MOU with SIRD.







# **IGNITE**

## **FACULTY ACHIEVEMENT**

#### Hybrid Optimization Based Convolutional Neural Network for Intrusion Detection System

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Abtract—Intrusion Defection System (IDS) is one of the common steep learning (ID) seekulings that the used to find and identify outliers to prevent adversarial attacks, fraud, and network intrusions. This paper proposed a hybrid Particle Swarm Optimization and Grey Wolf Optimization (IHSOGWO) based Convolutional Neural Network (CNN) HPSOGWO is evaluated on the NSL-KDD dataset which contains 5 different classes and 41 features. The PSO is good for global exploration and GWO is for local exploitation. The hybrid PSO and GWO algorithm achieves a better balance speed. The CNN is utilized to enhance the system's capability to identify and classify intrusion accurately and effectively. The proposed IPSOGWO-based CNN model attains better results by utilizing evaluation metrics like accuracy, precision, recall, 0,9879 and 0,9767 correspondingly which is comparatively higher than existing techniques like Chicken Swarm Optimization based Deep Long Short-Term Memory (ChCSO based Deep LSTM), Deep Neural Network (DNN) and LSTM. Keywork—Convolutional Neural Network (DNN) and LSTM.

Keywords—Convolutional Neural Network, Deep Learning, Grey Wolf Optimization, Intrusion Detection System, Internet of Things, Particle Swarm Optimization.

#### I. INTRODUCTION

I. INTRODUCTION

Globally, the Internet of Things (IoT) is the most popular and innovative technology in automated network systems and it is the intersection of the internet and intelligent objects. An it is the intersection of the internet and intelligent objects. An information with each other [1], IoT target joins the devices and allows machine-to-machine communication to share information without the support of human [2]. A huge development of IoT devices in an open source has revealed networks to the number of cyberattacks and security threats of the networks to the number of cyberattacks and security threats in the connected devices and also even to detect unknown attacks when the attacks cannot be identified in the network information [5]. An IDS is essential and it detects a network traffic attack and dispatches an alert of a network controller by well as attack types [6]. It is located at the outside infrastructure of the network and it performs an estimation of network traffic [7]. The Host IDS (HIDS) collects the data and detects an intrusion on a certain machine called the host and Network IDS are the types in placement of an IDS. The NIDS

studies and examines network traffic at the level of the host that produces an alert for malicious or hostile packets [8]. The major contribution of this research is as follows:

- The preprocessing is done by using mix-max normalization which improves the model performance and fed to the feature selection.
- The hybrid of Particle Swarm Optimization and Grey Wolf Optimization (HPSOGWO) is utilized for the feature selection process. The Convolutional Neural Network (CNN) is utilized for classification.
- The proposed HPSOGWO based CNN model was evaluated by using evaluation metrics like accuracy, precision, recall, specificity, and f1-score.

The remaining portion present in the manuscript is organized as follows: Section 2 illustrates the Literature review. The block diagram of the proposed model is presented in Section 3. The experimental result of this proposed model is illustrated in Section 4. Section 5 illustrates the conclusion of this paper and lastly, this paper finishes with the references.

#### II. LITERATURE REVIEW

II. LITERATURE REVIEW

Bhushan Deore and Surendra Bhosale et al. [9] implemented a hybrid optimization-based CNN-LSTM technique for an Intrusion detection system. This developed model utilizes Chimp Chicken Swarm Optimization based Deep Long Short-Term Memory (ChCSO-Deep LSTM) for IDS procedure. The CNN was utilized for the feature extraction process. The deep LSTM was utilized for network IDS and it is trained through an optimization technique for enhancing detection performance. The developed model convergence speed and high-quality solutions however, this model has population diversity and local optima.

Sharuka Promodya Thirimanne et al-real-time IDS using Deep Neural Netwa-trained through 28 features and it includ-tance the control of the control of the and feature scaling. It is utilized for in-information to train the DNN model to cr IDS was hosted on a server so everyo-system and incorporate it with their loca this model consumed more time to be enhance the computational cost.

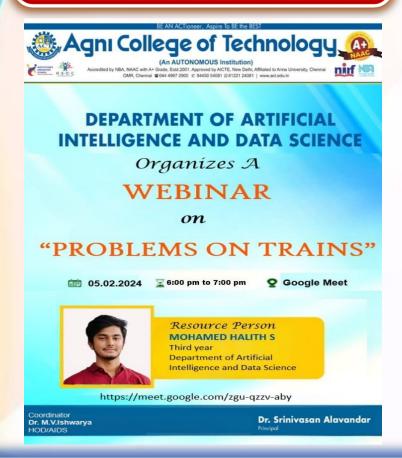


Dr. Sureka N, Head, Department of Biomedical Engineering, has successfully published a paper on the title "Hybrid **Optimization Based Convolutional Neural Network for** Intrusion Detection System" in IEEE Xplore on February, 2024.



#### A DAILY NEWSLETTER

#### **AIDS WEBINAR SERIES**



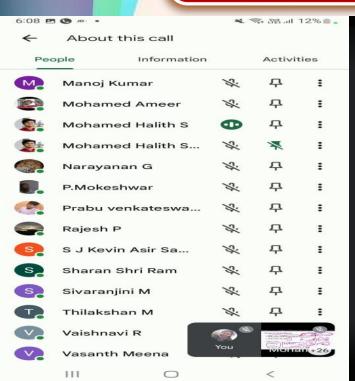
The Department of Artificial Intelligence and Data Science has arranged the WEBINAR SERIES on Aptitude Topics from 22.1.2024 to 9.2.2024. The webinar on "PROBLEMS ON TRAINS" was efficaciously conducted by speaker MOHAMED HALITH.S, third year AIDS from 6.00pm to 7.00pm through Google Meet on 5-02-2024. Many positive feedbacks were given by third year AIDS students, regarding the same.

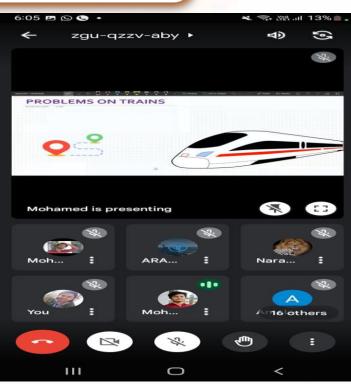






## **GALLERY**









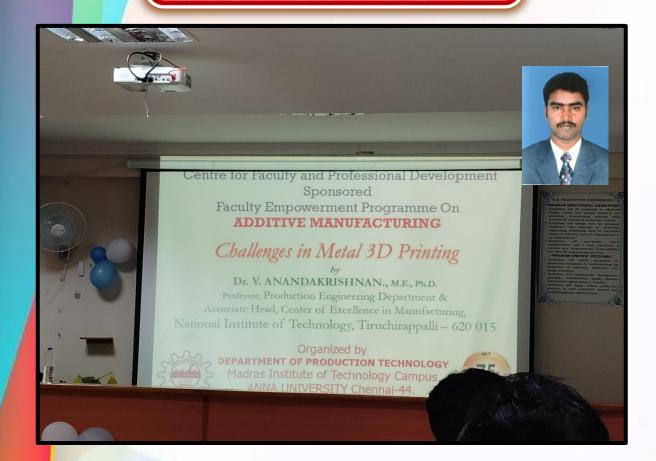








#### **FACULTY PARTICIPATION**



Mr. GOWTHAMAN P , Assistant Professor , Department of Mechanical Engineering , attending Six days Faculty Empowerment Programme titled "Additive Manufacturing" conducted by the Department of Production Technology , at MIT Campus, Anna University from 5<sup>th</sup> January to 10<sup>th</sup> January ,2024.







## **FACULTY PARTICIPATION**



PURUSHOTHAMAN P., Assistant Professor & Head, Mechanical , has participated Department of "Intellectual successfully completed the FDP titled **Property Right & Patent Drafting"** conducted by AMET University from 4<sup>th</sup> January to 12<sup>th</sup> January ,2024.





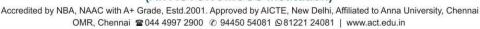


#### **FACULTY PARTICIPATION**



Dr. B. Dhanasakkaravarthi, Assistant Professor, Department of Mechanical, has participated and successfully completed the Webinar titled " **Understanding the Components of Electrochemical Cells** " conducted by ISIEINDIA on 3<sup>rd</sup> February , 2024.







## STUDENT ACHIEVEMENT

simplilearn SkillUP

CERTIFICATE OF COMPLETION

EZHILARASAN T

has successfully completed the online course:

Design Thinking for Beginners

This professional has demonstrated initiative and a commitment to deepening their skills and advancing their career. Well done!

09<sup>th</sup> Dec 2023

Certificate code: 4704386





T. Ezhilarasan (CSE), a first-year student in the Department of Science and Humanities, has successfully completed the online course on **Design Thinking for Beginners** provided by SkillUP in the month of December 2023.

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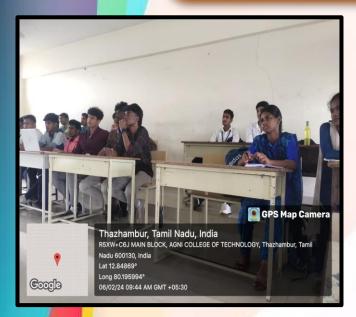
OMR, Chennai 2044 4997 2900 @ 94450 54081 @81221 24081 | www.act.edu.in







## STUDENT'S SEMINAR





**Omprakash** and **E.Dinesh**, IV-year students, Department of Aerospace Engineering, conducted the session on aptitude. He made the students more interested. It helped them prepare for their interviews.





## STUDENT PARTICIPATION



#### CERTIFICATE OF COMPLETION

Presented to

#### Manoj Aswin

For successfully completing a free online course
Web Scraping with Python

Provided by
Great Learning Academy



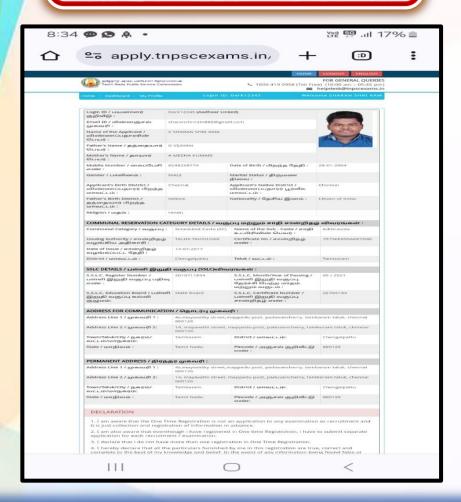
To verify this certificate visit verify mygreatiearning.com/LTVHNDVC

**Manoj Aswin**, III Year Student, Department of Aerospace Engineering, has completed an online course on **Web Scraping with Python** offered by Great Learning Academy today.





#### **TNPSC EXAMS**



**Sharan Shriram V**, a third-year AIDS student, registered for Tamil Nadu Public Service Commission (TNPSC)-4 group exam mentored by Mrs.Pandi Deepa.P, Assistant **Professor of Artificial Intelligence and Data Science** on 5<sup>th</sup> February 2024.





# **IGNITE**

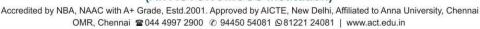
#### **GROUP DISCUSSION**





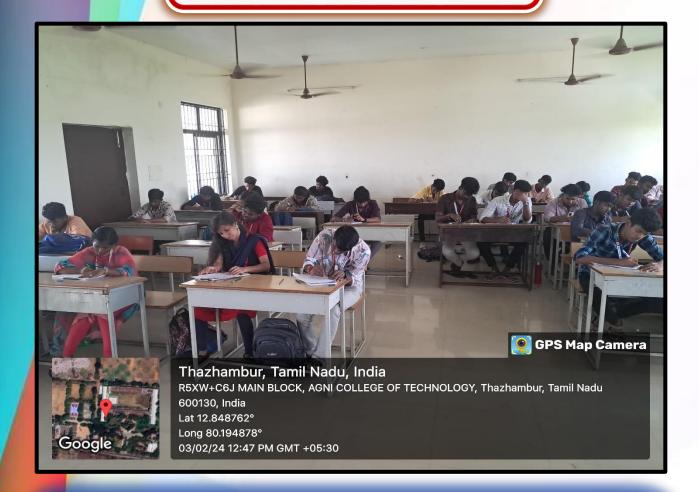
III Year Students, Department of Information Technology, have participated in an interactive **Group Discussion** on the topic "**Different methodologies used in Software Development Life Cycle (SDLC)**" which was organized by **Mrs.G.Tharagai Rani,AP/IT.** 







#### **AIDS SLIP TEST**



Amala Preyadarchane.J, Assistant Professor of Artificial Intelligence and Data Science, conducted "THE SLIP TEST" for the third-year AIDS students for the subject of CS3691:Embedded Systems And IoT on 3rd February 2024, after the completion of Unit 1.

