

IGNITE 2024



A DAILY NEWSLETTER

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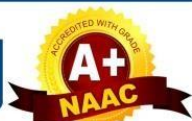
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HEXAWARE MOCK ASSESSMENT



The final year students of **CSE, IT, AIDS, EEE and ECE Departments** take the “**Mock Assessment for Hexaware Technologies**” on **28th August 2024**. Hexaware Technologies is a well-known company that provides IT services, business process outsourcing, and consulting services to clients.

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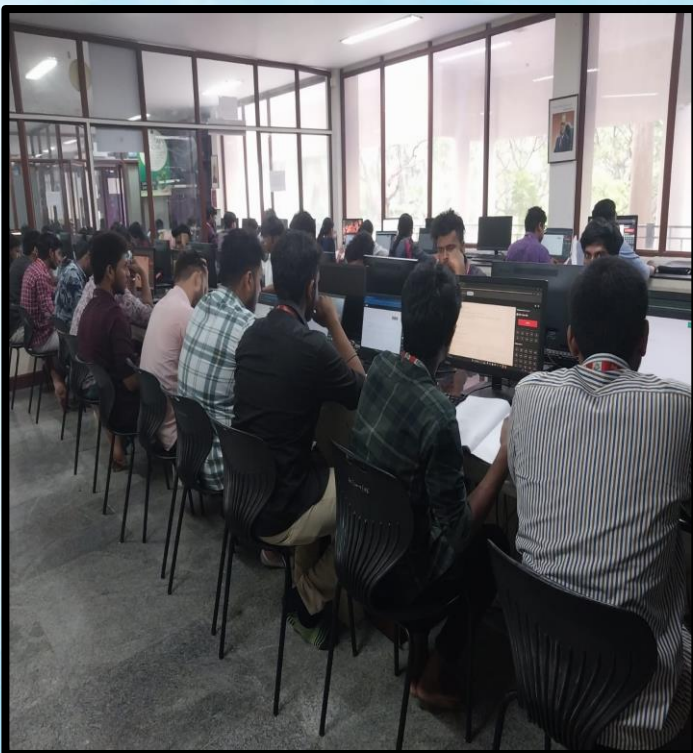
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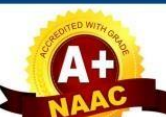
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FACULTY ACHIEVEMENT

Enhancing Intrusion Detection with Grey Wolf Optimization-Tuned Neural Networks in a Big Data Framework

2024 IEEE International Conference on Information Technology, Electronics and Intelligent Communication Systems (ICITEIC)
Karnataka, India, Jun 28-29, 2024

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Abstract. Nowadays, the effective intrusion detection and study of secure landscapes in big data environment faces many challenges. This work intends to employ an intrusion detecting scheme, which encompasses three phases "(i) Preprocessing, (ii) Feature Extraction, and (iii) Intrusion Detection". Initially, the data is preprocessed using a "map-reduce" based framework that aids in the process of data normalization. Then, from the normalized data, flow based features are extracted that are then given to the intrusion detection phase. Optimized Neural Network (NN) is used for this purpose. For more precise prediction, the training (weight) of NN is done by "Genetic Optimization" algorithm, which assigns an optimal weight. Finally, the superiority of the developed model is assessed by comparison with existing methods.

Keywords—Attack detection; IoT; Normalization; Optimized NN; GWO Optimization.

technologies, IoT is the most needed technology. Its main aim is to make everything SMART. IoT devices consume less power so it is easy to collect and transmit the data in remote areas. Each IoT device has to collect data, transfer data and analyze the data. The first step is data transmission and collection [7] [8] [9]. Data transfer is the second step where the gateways are used. The third step is the analysis of data, where interfaces and back end systems are used. These three stages are more vulnerable to attack and it causes more data to loss [10] [11] [12].

Moreover, the development of IoT products has more challenges such as connectivity, security and privacy of data, flexibility and compatibility and data collection and processing [13] [14]. The unsecured and un protected layer of IoT leads to the entry point of the attackers to initiate the attacks. Some of the attacks or intrusion present in IoT is DDos attacks, sinkhole, wormhole, Selective forwarding, Rank attack, Routing attack, malware attacks, home intrusions, Network hacks, lack of device updates and etc.

The contribution of the work is as follows:

- Establishes a new intrusion detection model, where the flow based features are classified via optimized NN for detecting the existence of intrusions.

Section II of this study summarizes the reviews of IDS models. Section III elaborates on the pre-processing and feature extraction of the proposed IDS system. Section IV summarizes the GWO algorithm-optimized NN. Section VI wraps up the effort, and Section V outlines the outcome.

II. LITERATURE REVIEW

A. Related works

In 2020, Ahmed et al. [15] applied Comprehensive framework for detecting cyberattacks in IoT using deep learning. On fog nodes, they have put the attack detector into practice. To determine which DL model performed the best, six DL models were compared with other DL. DL methods need large storage, extensive computation and high power. This is due to its high capability of extracting known attacks and unknown attacks. Each DL method was evaluated to detect various attacks, each gave good detection accuracy over other models.

In 2020, Geethapriya *et al.* [16] have suggested that every medical equipment used in IMT be equipped with sensors and use wireless connectivity to transmit data. In health care applications, having everything as intelligent

Nomenclature	
Abbreviation	Description
CDP	Complex event processing
DIOS	Distributed Denial-Of-Service
DL	Deep Learning
DMT	Intersect of Medical things
IDS	Intrusion Detection System
FNR	False Negative Rate
FPR	False positive rate
GWO	Grey Wolf Optimization
IoT	Internet of Things
IMT	Intersect of Medical things
IDH	Intrusion Detection Homonymy
MCC	Matthews Correlation Coefficient
MFC	Multi-Plane Correlation
NN	Neural Network
OF-DA	Online Learning, Detection Algorithm
PBO	Particle Swarm Optimization
SVM	Support Vector Machine
WOA	Whale Optimization Algorithm

1. INTRODUCTION

Technological developments in Internet, networks, and communication paves the way for huge quantity of data to be produced each day from resources like industry, healthcare, media and transportation. This enormous data quantity is defined "as big data by four characteristics: large volume, large variety, large velocity, and large veracity" [1] [2] [3]. As the extent of big data maximizes, the accessible attack points also get raised and it becomes complex for detecting intrusion in big data environments.

Due to the rapid increase in technologies, people in the society are expected to use automated technologies to make their life easier [4] [5] [6]. While comparing the



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Authorized licensed use limited to: VII University- Chennai Campus. Downloaded on August 28, 2024 at 04:09:59 UTC from IEEE Xplore. Restrictions apply.

Dr. R. Ratheesh, Head/Assistant Professor, Electronics and Communication Engineering, has published an article titled **“Enhancing Intrusion Detection with Grey Wolf Optimization-Tuned Neural Networks in a Big Data Framework”** in 2024, IEEE International Conference on Information Technology, Electronics and Intelligent Communication Systems (ICITEICS-24) **(Scopus Indexed)**.

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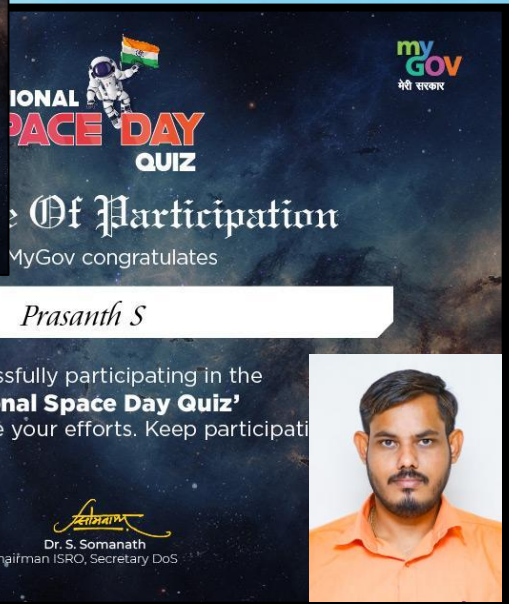
FACULTY PARTICIPATION



Ms. Himali Barman, Assistant Professor, Department of Biomedical Engineering, participated in a 5-day faculty development program on **"Recent Trends in Life Science Research"** from 19th August to 23rd August at Gojan School of Business and Technology.

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FACULTY PARTICIPATION



Mr. Yokesvaran, and Mr. Prasanth, Assistant Professor, Department of Aerospace Engineering, participated in the “National Space Day Quiz” conducted by ISRO and My GOV.

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FACULTY PARTICIPATION



Mr. Kannan R, Assistant Professor, Department of Computer Science and Engineering has attended the FDP titled, "AI for Future Workforce", organized by National Institute Of Technical Teachers and Research(NITTR) in collaboration with intel digital readiness from 22nd August 2024 to 26th August 2024.

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STUDENT ACHIEVEMENT



Gowrisankar J, IIIrd Year Student, Department of Information Technology, has completed an online course on “**Fundamentals of Generative AI, Fundamentals AI Concepts**” organized by Microsoft on 24th August 2024.

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STUDENT ACHIEVEMENT



Ajay Kumar S K, IIIrd Year Student, Department of Information Technology, has completed an online course on **“Angular”** organized by Infosys Springboard on 10th August 2024.

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STUDENT PARTICIPATION



V. Aravind, IIIrd Year Student, Electronics and Communication Engineering, participated in the “Level –I E-Commerce & Tech Quiz of the Flipkart GRID - 6.0 Software Development Track” organized by Flipkart.

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STUDENT PARTICIPATION



Certificate of Participation

This is to certify that
Vignesh S

from Agni college of technology has participated in the
Level 1: E-Commerce & Tech Quiz of the Flipkart GRiD
6.0 - Software Development Track organised by the
Flipkart .



S. Vignesh, IIIrd Year Student, Electronics and Communication Engineering, participated in the “**Level –I E-Commerce & Tech Quiz of the Flipkart GRID - 6.0 Software Development Track**” organized by Flipkart.

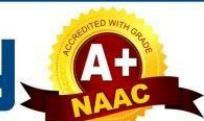
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STUDENT PARTICIPATION**CERTIFICATE OF COMPLETION**

Presented to

Yashir M H

For successfully completing a free online course
Prompt Engineering for ChatGPT

Provided by
Great Learning Academy
(On August 2024)

Yashir. M.H, IIIrd year student, Department of Civil Engineering, has successfully completed an online certification course titled **“Prompt Engineering for ChatGPT”** provided by Great Learning Academy on 28th August 2024.

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STUDENT PARTICIPATION

CERTIFICATE OF EXCELLENCE

THIS CERTIFICATE IS AWARDED TO

SCALER
Topics

ASHAAZ AHMED KHAN A

In recognition of the completion of the tutorial: **Microsoft Malware Detection using Machine Learning**

Following are the the learning items, which are covered in this tutorial

20 Video Tutorials 1 Modules

25 August 2024

Anshuman Singh

Anshuman Singh

Co-founder SCALER



Mr. Ashaaz ahmed khan, IInd yr, Department of Computer Science and Engineering has completed an online tutorial course titled, **“Microsoft Malware Detection using Machine Learning”** on **25th August 2024** provided by **SCALER**.

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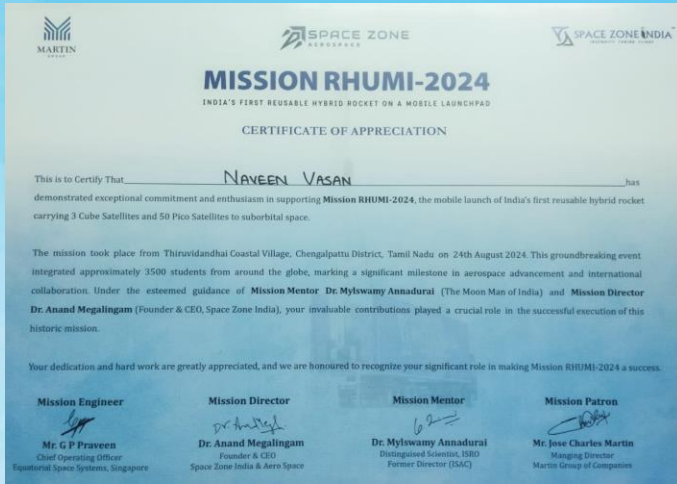
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STUDENT PARTICIPATION



Naveen Vasan, Praful Jeie, Vijayaraj, Suriyan, IIIrd year students of Aerospace Engineering, have participated in the "Mission Rhumi-2024" event on India's first hybrid reusable rocket conducted by Space Zone India on 24th August 2024.

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DEPARTMENT ACTIVITY



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DEPARTMENT OF MECHATRONICS ENGINEERING

THREE DAYS WORKSHOP
on
“ INDUSTRIAL ROBOTICS ”

TOPICS COVERED

1. FUNDAMENTALS OF INDUSTRIAL ROBOTICS
2. SIMULATION TRAINING (ROBODK)
3. KAWASAKI INDUSTRIAL ROBOT TRAINING

28th to 30th AUGUST 2024

Registration fee: **Rs.1000/-**

COORDINATORS:

Mr. K. GANESHKUMAR Assistant Professor Department of Mechatronics Contact: + 91 8122924029	Dr. S. DEEPAK Assistant Professor Department of Mechatronics	Dr. R. PANDIYARAJAN Head of Department Department of Mechatronics	Dr. Srinivasan Alavandar Principal
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SCAN HERE TO REGISTER



The Dean of Academics, Dr. Anand, inaugurated a three-day “workshop on Industrial Robotics”, along with Dr. Pandiarajan, Head of the Department, Mechatronics, extended a warm welcome to the participants."

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DEPARTMENT ACTIVITY



Mr. Ganeshkumar, Assistant Professor of Mechatronics, discussed the “**Fundamentals and types of robotics**” on the first day of the workshop.

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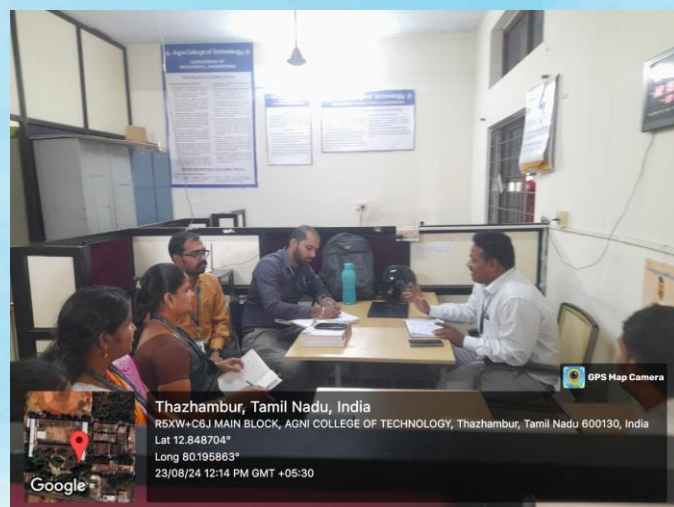
DEPARTMENT MEETING



Mrs. R. Beaula Jasmine, Head, Department of Civil Engineering, has convened a department meeting with faculty on 23rd August 2024. The meeting was about Alumni meet registration, Fee collection, Graduation day, Pride activities, Internships, Placement & Training, Agni hackathon and other plans for the department activities were also discussed in the meeting.

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DEPARTMENT MEETING



Dr. P. Murugan, Head of the Department, Chemical Engineering, conducted a department meeting on 23rd August 2024. The meeting focused on Alumni Meet Registration, Students Attendance Monitoring, Fresher's day and Graduation day celebration, Placement and Training, Smart India Hackathon, and Internship permission etc.

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