CENTRE FOR DATA SCIENCE

About the Centre

Data science research Centre has started in the year 2021, by encompasses with data preparing, cleansing, aggregating, and manipulating the data to perform advanced data analysis. Additionally, Data Science Centre has grown into a significant research facility with high configured systems and a multidisciplinary staff of experts with specializations in Data Science, Social media analytics, Data analytics, Machine Learning, Natural Language Processing, Graph Theory, Neutrosophic set and systems, Stochastic models, Theoretical Computer Science. To incorporate the art of Data Science in the field of research to bring out innovations in all scientific disciplines.

Objectives of the Centre

- To create a Knowledge hub of Data Science with a consistent urge to get enlightened by developing, maintaining and continuously exploring and improving the nuances of resources/Data Science to serve the need of the Technological demands.
- To concerned with the collection, preparation, analysis, visualization, management and preservation of large collections of information aiming at generating value from the data itself.
- To build systems and algorithms to extract knowledge, find patterns; generate insights and predictions from diverse data for various applications.
- To leading field of study because of the numerous opportunities it offers in terms business and financial solutions.

Facilities Available

Intel Server Configuration

- Server Board: S2600WFT
- Processor: Intel Xeon Silver4210 CPU @2.20GHZ 2.19GHZ
- RAM: 64 GB HDD :1863 GB

Faculty Members

Name of the Faculty	Specialization
Ms. N. Antony Sophia(Centre Incharge)	Image processing, Cloud Computing Machine Learning
Ms. N. Deepika (Centre Incharge)	Artificial Intelligence, Machine Learning, Natural Language Processing
Dr.P.Selvaraju	Graph Theory and Solar Energy
Dr.D.Nagarajan	Neutrosophic set and systems, Stochastic models, fuzzy set and systems
Dr. A. Elumalai	Graph Theory and Theoretical Computer Science
Dr. A. Kanchana	Boolean algebra and fuzzy system
Dr. M. Mahendran	Graph theory and statistics
Dr. S. Prema	Complex analysis
Mr. S. Kuppuraj	Optimization techniques and Fuzzy logic
Mr. S. Meenakshi Sundaram	Optimization techniques and Fuzzy logic
Mr. V. Karthick	Optimization techniques and Fuzzy logic
Ms. B. Revathi	Fuzzy set theory
Ms. Subha S	Data Mining, Machine Learning
Ms. Kanagavalli N	Data science, social media analytics, Data analytics
Ms.Priya Kalaivani	Data Science, Artificial Intelligence

Enrolled Students list

S. No.	ROLL NO	NAME OF THE STUDENTS
1	202006044	VISHNU KUMAR AK

S. No.	ROLL NO	NAME OF THE STUDENTS
2	201901088	NEHA RAO G
3	201901088	NEHA RAO G
4	202001128	SARAS PRASAD RAJU.V
5	201902045	SRIMAITHREYI S
6	202006042	THILAK KUMAR NM
7	202007014	DEEPESH H
8	202007032	R MADHUMITHA
9	202007038	NIVETHA N
10	202007040	PAVITHRA P
11	202007009	BALAJI.R
12	202007026	JOEL JOSEPH
13	202001040	DHAATCHAYINI.K.S
14	202001020	ASMITHA R
15	202007028	G. KAVUTHAM
16	202001014	ANUSH BHARATHWAJ L
17	202007049	THULASI RAM R L
18	201901028	CHARULATHA T
19	201901027	S K CHARU LATHA
20	202007042	PUSHPA M
21	202002028	KRITHIKA K
22	202007027	KANNAN.S
23	202007002	ABISHEK.K.M
24	202007036	NEERAJA T
25	202001002	P.ABDUL WAHID
26	202007014	H DEEPESH
27	201901109	RUHIT KRISHNAN M
28	202002002	AKSHAY KUMAR V
29	202001077	KRUTHIKA M

S. No.	ROLL NO	NAME OF THE STUDENTS
30	201901024	BALAJI.V
31	202007017	K DILIP KUMAR
32	202002006	BALAMURUGAN R
33	201901065	LAKSHMI C R
34	202007021	GEMINI A
35	201901008	AISHWARYA E
36	202007007	ARJUN S
37	202001029	BHARATH B
38	202001023	AVINASH J
39	202007041	PRAVIN RAJ S
40	202007039	PADMAVATHI G
41	202002017	ELANGOVAN N
42	202007018	FREDERICK THARUN.T
43	202007015	DHANUSHMATI S
44	202007007	ARJUN S
45	201902014	DHIBAK KUMAR S
46	202001133	SAVITHA R
47	202001156	VAISHNAVI.V
48	202007016	DILAN.P
49	201902037	KOVI RAHUL
50	201902075	SARVESWARAN U
51	201902095	R.VENKATESHAN
52	202001151	SWETHA.U
53	202001157	VARSHA. S
54	202001144	S. SRI RAMAN PRASAD
55	202001085	MAHALAXMI.K
56	202001073	K.KEERTHANA
57	201901103	REVATHI E

S. No.	ROLL NO	NAME OF THE STUDENTS
58	202001037	DEEPAK KUMAR P
59	201901059	KAVIYA V
60	202001141	SMIRTHIKA SHRI .P
61	201901078	MOHANA V
62	202001078	KUMARAN U
63	202001070	KASINATHAN.K
64	202001062	JAHNAVI E
65	202001114	RAMYA C

Publication Details (2021-2022)

9 articles have been published in reputed Journals.

High impact factor (IF) Journal Publication Details

Name of Faculty	Title	Name of the Journal	Impact Factor	SCI
Dr.D.Nagarajan	Optimization of vendor's inventroy model with multi-supplier and muli-retailer using fuzzy parameter	International journal of Intelligent system	8.993	SCI
	Real-time forecasting of the COVID 19 using fuzzy grey Markov: a different approach in decision-making	Springer	2.998	SCI
	A modle for container inventory with a trapezoidal bipolar neutrosophic number	Arabian Journal of Science and Engineering	2.807	SCI
	Economic Ordering Quantity Inventory Model with Verhulst's Demand Under Fuzzy Uncertainty for Geographical Market	International Journal of Fuzzy Systems	1.737	SCI

Name of Faculty	Title	Name of the Journal	Impact Factor	SCI
	Single-Valued and Interval-Valued Neutrosophic Hidden Markov Model", Mathematical Problems in Engineering	Mathematical Problems in Engineering	1.430	SCI
Mrs. N. Antony Sophia	Detection of Vocal Cord Ulcer Using Advanced 3D ST Volumetric Segmentation Net Architecture	IETE Journal of Research	2.33	SCI
	Quantitative Analysis of Thyroid Nodules' Severity and Changes in the Voice Box	IETE Journal of Research	2.33	SCI
	Classification of Acute Pathology for Vocal Cord Using Advanced Multi-Resolution Algorithm	International Journal of Pattern Recognition and Artificial Intelligence	1.37	SCI
Mrs. S. Subha	Prediction Model for a Good Learning Environment Using an Ensemble Approach	Computer Systems Science and Engineering	4.397	SCI

Details of Industry/Academic Mentors

S.No.	Industry/Academic Mentors	Name of the Industry/ Institution	Expertise	Logo
1.	Dr Novin Ghaffari, Chief Intelligence and Analytics Officers	Nulixir Inc. Austin, Texas	Data Analytics	
2.	Mr. Jai Ugra, Inventory Analyst	Target, Minnesota, United States	Data Analytics	
3.	Mr. Sidiq Sherief,			

S.No.	Industry/Academic Mentors	Name of the Industry/ Institution	Expertise	Logo
	Senior Technical Traine			
4.	Mr.RajKumar Kalaimani, Technical Lead	CITIUS Technologies, Chennai	Artificial Intelligence	CitiusTech

Details of MoUs

S.No.	Name of the Industry	Date of MoU	Linkages
1.	INTEL UNNATI AI – Data Centric Lab		Intel AI & Data Science
2.	IMARTICUS LEARNING PVT LTD.		Training in AI and Data Science
3.	ICT Academy	13.07.2022	MS Power BI

Details of Completed/Ongoing Projects

1. Detection of Voice changes using Acoustic Analysis (Ongoing)

Voice is the most natural way to express one's thoughts, but thyroid disease degrades the quality of one's voice. Thyroid nodules are lumps of thyrocytes in the thyroid gland that may press the voice box, which results in voice change. To visualize the growth in the thyroid gland, the modified 3D Level Set Volumetric Segmentation (3D LSVS) techniques were used. Thyroid nodules' severity can be measured based on the volume of the lump. An inferential statistic occurs with confidence intervals between the substance of very high concern (SVHC), Systemic Viral Infection (SVI), STMW and SVHD using Multivariate analysis

(MVA) and testing. Acoustic analysis measured the voice changes. Different prevalent methods are compared concurrently and the results of quantitative analysis are better.

2. **Prediction Model for a Good Learning Environment (Ongoing)**

   It consists of a series of modules; data preprocessing, data normalization, data split and finally classification or prediction by the RF classifier. The preprocessed data is normalized using minmax normalization often used before model fitting. As the input data or variables are measured at different scales, it is necessary to normalize them to contribute equally to the model fitting. Then, the RF classifier is employed for course selection which is an ensemble learning method and k-fold cross-validation (k = 10) is used to validate the model. The proposed Prediction Model for Course Selection (PMCS) system is considered a multi-class problem that predicts the course for a particular learner with three complexity levels, namely low, medium and high. It is operated under two modes; locally and globally. The former considers the gender of the learner and the later does not consider the gender of the learner. The database comprises the learner opinions from 75 males and 75 females per category (low, medium and high). Thus the system uses a total of 450 samples to evaluate the performance of the PMCS system. Results show that the system's performance, while using locally i.e., gender-wise has slightly higher performance than the global system. The RF classifier with 75 decision trees in the global system provides an average accuracy of 97.6%, whereas in the local system it is 97% (male) and 97.6% (female). The overall performance of the RF classifier with 75 trees is better than 25, 50 and 100 decision trees in both local and global systems.

3. **Android Application to Increase Faculty Performance Using Gamified Leaderboard (Completed)**

In today's world, Android Applications have changed our lives and have become an indispensable part of our lives because of its specialty to simplify our routine work, thereby saving our time and improving us professionally. Currently most of the Ranking system in any organization recruitments, Faculties performance are paper based, which costs time and resources. Criteria's are developed, printed,

and then collected data, entry, editing, cleaning, which is time consuming and costly. Proposed application is the starting to avoid those circumstances which have been currently faced by any organization. This application all about ranking and managing the faculties' research works to identify top, deserves performers across the College campus. This program keeps the faculties driven by displaying their individual scores with an overall leaderboard, which motivates and helps to achieve their goal. The user has to sign up with their details and once it's done, a verification mail will be sent to their respective email Ids. Unless the user is verified, they won't be able to proceed. Then it will be directed to the home screen where they can view their overall performance leaderboard, coding leaderboard, Mentorship leaderboard etc. They can avail leave and mark attendance through it. The faculties will add their individual achievements in the respective fields. After that, a request will be sent to the admin app, where the details given and the certification will be verified and approved. If the admin declines the request, the results will not be reflected in the leaderboard. Its use in the teaching-learning process has been carried out in parallel with active methodologies, and in the use of learning management systems that include various elements of the animation to be integrated for ranking and evaluation activities. The gamified programmatic contents idea is presented, and it specifies a level-based programmatic contents structure as well as other elements used, such as points and different types of rewards, the progress bar, and the leaderboard. These contents on the platform will help the organization for evaluation and motivate the faculties to learn and explore.

KEYWORDS - Android application, College faculty management system, gamified leaderboard, Online leave management

Team Mentor **-** Ms. N. DEEPIKA, AP/CSE

Team Members - KISHORE THEERAJ V J, KOUSHIK EASWAR D and NARAYANI S

4. Meta-Data-Based Recommendation System for Movies(Completed)

The amount of data on the World Wide Web is growing exponentially. Users often get lost in this vast ocean of data. Recommendation systems are used to filter out valuable information from a large amount of data. According to the user's choice, the work proposes a movie recommendation system in this document. The proposed system aims to provide personalized movie recommendations selected by users. Generally, the underlying recommendation system uses the following factors to make recommendations: user preferences, called content-based filtering, or similar user preferences, called collaborative filtering. The proposed work uses a hybrid filtering, a combined approach of content and collaborative filtering Technology, to improve and expand user recommendations.

KEYWORDS - Recommendation systems, Hybrid recommender, Meta Data-Based Filtering

Team Mentor - Ms. N. DEEPIKA, AP/CSE
Team Members - MORRIS DARREN, KARTHICK RAJ D and KARTHIKEYAN M

Events conducted

1. CSI has organized a five days Faculty Development Programme on “Data Science” from 24/08/2020 to 28/08/2020. Seminar conducted on “New Generation in Data science” was held on 10th March 2021 Mr. Deepan karthick Nedumaran, Technology Associate at Morgan Stanley, USA was the resource person.

2. Centre for Artificial Intelligence & Data Science organized Online Five Day FDP on Future Trends in AI & DS from 31.12.2021 and 08.01.2022.

3. Imarticus Data Science Club conducted a Guest Lecture Webinar on “Data Analytics in Health Care" on 12.11.21

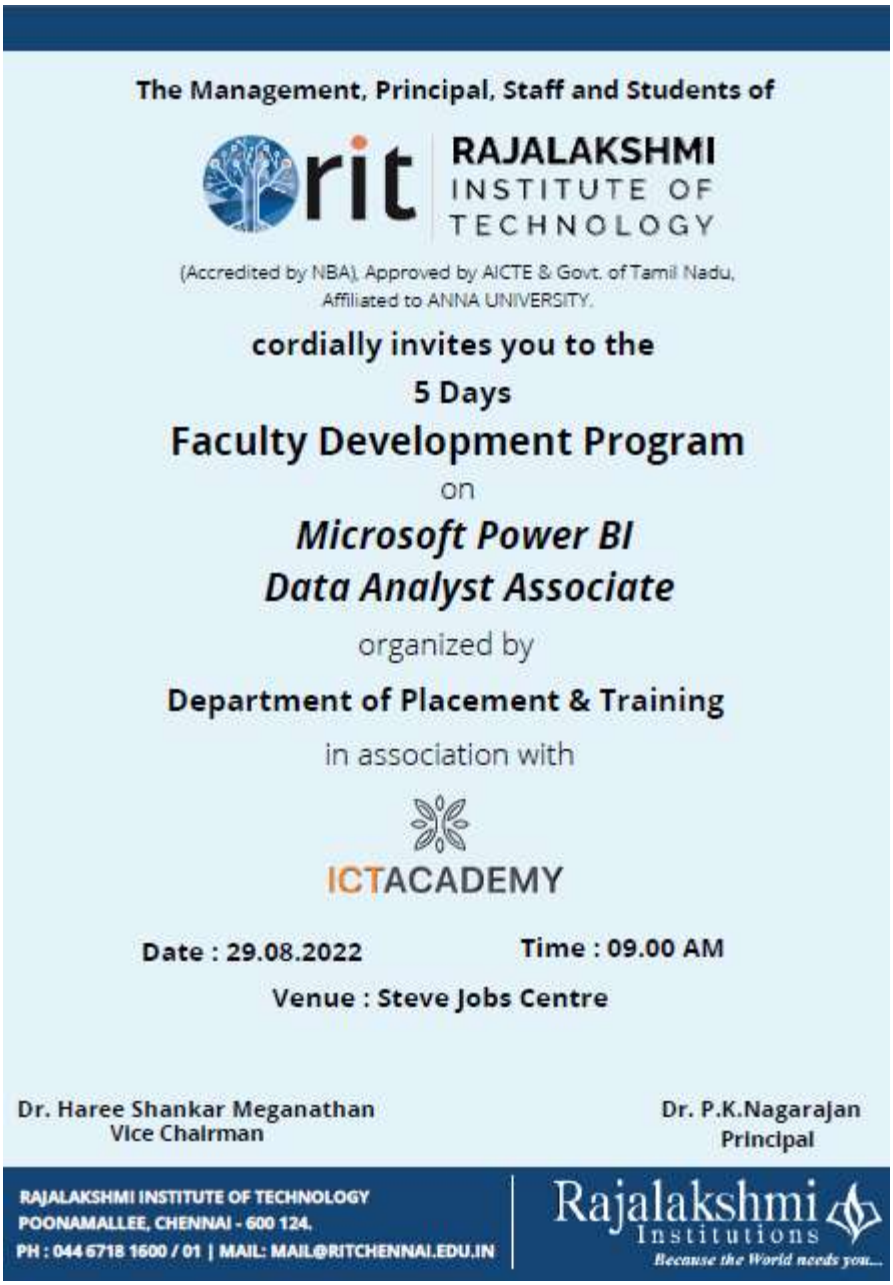
4. ICT Academy has conducted Seminar on “Artificial Intelligence and Data Science” on 23.04.2022

5. ICT Academy has conducted Five days FDP on Microsoft Power BI Data Analyst Associate from 29.08.2022 to 03.09.2022

Centre for Data Science has organized five days FDP on “Microsoft Power BI Data Analyst Associate”. The main objective of the programme is to bring together the Instructor Led Live Learning and Personalized self-paced Learning Experiences to help the student build requisite skill across.

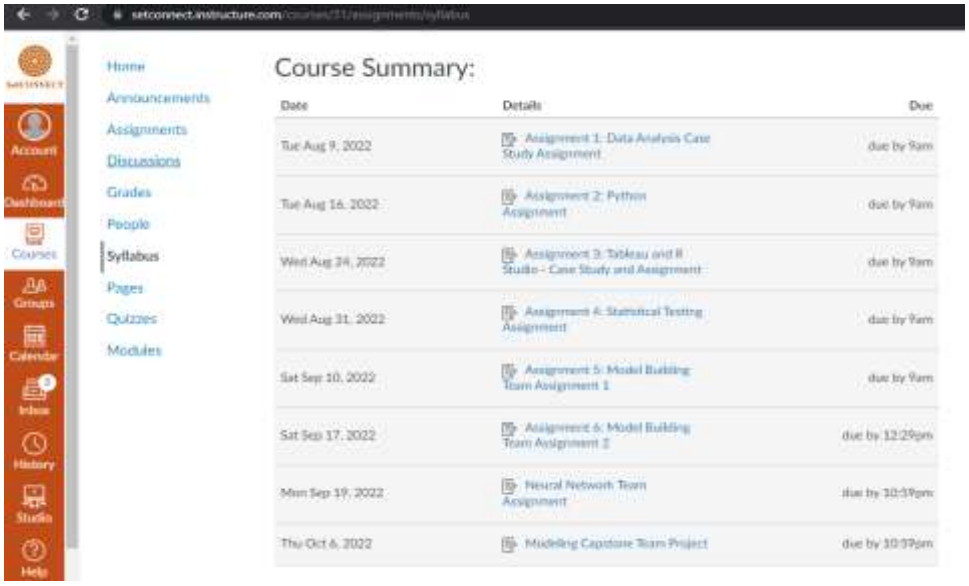
Resource Person: Senior Technical Trainer at ICT Academy

Date: 29-08-2022 to 03-09-2022



Brochure - FDP

6. Students have enrolled for Set Connect Data Science Course from CSE, AI-DS cluster and participated in the Live On-Line Lecture Session for 8 weeks.



Snapshot – Course Summary

Snapshot – Set Connect Course Trainer

Snapshot – Set Connect Course Trainer

Seminar on Artificial Intelligence and Data Science

The Centre for Artificial Intelligence and Data Science organized the power seminar on "AI & Data Science". The main objective of the programme is to bring together the Instructor Led Live Learning and Personalized self-paced Learning Experiences to help the student build requisite skill across.

Resource Person: Mr.RajKumar Kalaimani, CITIUS Technologies

Date: 23rd April 2022

The trainer focused on various concepts which are listed as follows:

1. Basics of Artificial Intelligence
2. Data Science
3. Real Time Application in AI & Data Science

Snapshot - Seminar on Artificial Intelligence and Data Science

Set Connect Data Science Course