RAJEEV INSTITUTE OF TECHNOLOGY
HASSAN- 573 201, KARNATAKA
(Affiliated to VTU, Belagavi., Approved by AICTE, New Delhi.)
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Ref. No.: **Date: 23/09/2019**

To,

The Principal,
RIT, Hassan.

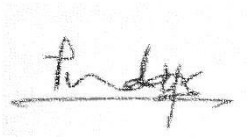
Respected Sir,

Sub: "Request to Conduct a 5-Day Workshop on Machine Learning"

With utmost respect the department of CSE organizing 5 days' workshop on Machine Learning on 30th Sep to 04th Oct 2019. The objective of this workshop is to introduce our students to the fundamental concepts of Machine Learning and enable them to gain hands-on experience in using popular tools and techniques. The workshop will be conducted by experienced industry professionals who are well-versed in the subject matter and are passionate about imparting knowledge to the next generation. We kindly request your approval and support in organizing this workshop. We sincerely hope that you will consider our proposal favorably and grant us permission to conduct this valuable workshop for the benefit of our students.

Thanking You

Yours Sincerely,



(Dr. Pramod H B)

RIT office : 08172-243180 & 08172-243181
E-mail : cshod@rithassan.ac.in
web : www.rithassan.ac.in

5 DAYS WORKSHOP ON "MACHINE LEARNING"

From 30-SEP-2019 to 4-OCT-2019

Organized by

Department of Computer Science and Engineering
Rajeev Institute of Technology, Hassan

Date: 30/09/2019 to 4/10/2019
Title: Machine Learning
Coordinators: Dr.Pramod H B
Associate Professor
Dept. Of CSE
RIT, Hassan

Resource Persons:

Mr. Vishwajeet S Rana
Corporate Trainer
Innovians Technologies
Bangalore
R.T. Nagar,
Bengaluru, Karnataka – 560032

Mr. Amith Shankar
Corporate Trainer
Innovians Technologies
Bangalore
R.T. Nagar,
Bengaluru, Karnataka - 560032

Course Objectives

The objective of the machine learning workshop is to provide participants with a comprehensive understanding of machine learning concepts and practical applications. Through this workshop, attendees will gain hands-on experience in building and deploying machine learning models, enabling them to apply machine learning techniques to real-world problems. By the end of the workshop, participants should be able to:

1. Understand the fundamental concepts of machine learning, including supervised and unsupervised learning, regression, and classification.
2. Apply data preprocessing techniques to clean, transform, and prepare data for machine learning models.
3. Utilize popular machine learning algorithms and frameworks to create predictive models.
4. Evaluate the performance of machine learning models using appropriate metrics and techniques.
5. Gain practical experience through hands-on exercises and real-world projects.

Course benefits

Overall, machine learning workshops offer a dynamic and interactive learning environment, equipping participants with valuable knowledge and skills that have practical applications in a wide range of industries. Whether one is a beginner looking to start their machine learning journey or a seasoned professional seeking to enhance their expertise, attending a machine learning workshop can lead to significant personal and professional growth.

Program schedule:

Machine Learning Workshop(30th sept 2019 to 4th Oct 2019)			
Date	**Session**	**Topics Covered**	**Speaker**
Day 1 Sept 30th 2019	**Inauguration(9:00 sm to 9:30 am)**		**Mr.Vishwajeet S Rana**
	Session 1(9.30 am-11:00 am)	Introduction to Machine Learning	
	Short Break(11:00 am to 11:15 am)		
	Session 2 (11:15 am to 12:30pm)	Data Collection and Preprocessing	
	Lunch Break(12:30 pm to 1:30 pm)		
	Session 3(1:30 pm to 3:00 pm)	Hands-on: Setting Up Python Environment	
	Short Break(3:00pm to 3:15 pm)		
	Session 4 (3:15 pm to 4:30 pm)	Basic Concepts: Feature Engineering	
Day 2 Oct 1st, 2019	**Session 1(9.30 am-11:00 am)**	Introduction to Supervised Learning	**Mr. Amith Shankar**
	Short Break(11:00 am to 11:15 am)		
	Session 2 (11:15 am to 12:30 pm)	Linear Regression and Logistic Regression	
	Lunch Break(12:30 pm to 1:30 pm)		
	Session 3(1:30 pm to 3:00 pm)	Hands-on: Linear Regression Implementation	
	Short Break(3:00pm to 3:15 pm)		
	Session 4 (3:15 pm to 4:30 pm)	Evaluation Metrics for Supervised Learning	
Day 3 Oct 2nd, 2019	**Session 1(9.30 am-11:00 am)**	Introduction to Unsupervised Learning	**Mr.Vishwajeet S Rana**
	Short Break(11:00 am to 11:15 am)		
	Session 2 (11:15 am to 12:30 pm)	K-Means Clustering	
	Lunch Break(12:30 pm to 1:30 pm)		
	Session 3(1:30 pm to 3:00 pm)	Hands-on: K-Means Clustering	
	Short Break(3:00pm to 3:15 pm)		
	Session 4 (3:15 pm to 4:30 pm)	Dimensionality Reduction with PCA	
Day 4 Oct 3rd, 2019	**Session 1(9.30 am-11:00 am)**	Introduction to Neural Networks	**Mr. Amith Shankar**
	Short Break(11:00 am to 11:15 am)		
	Session 2 (11:15 am to 12:30 pm)	Deep Learning and Feedforward Neural Networks	
	Lunch Break(12:30 pm to 1:30 pm)		
	Session 3(1:30 pm to 3:00 pm)	Hands-on: Building a Feedforward Neural Network	
	Short Break(3:00pm to 3:15 pm)		
	Session 4 (3:15 pm to 4:30 pm)	Convolutional Neural Networks (CNNs) Basics	
Day 5 Oct 4th, 2019	**Session 1(9.30 am-11:00 am)**	Introduction to Natural Language Processing	**Mr.Vishwajeet S Rana**
	Short Break(11:00 am to 11:15 am)		
	Session 2 (11:15 am to 12:30 pm)	Text Preprocessing and Tokenization	
	Lunch Break(12:30 pm to 1:30 pm)		
	Session 3(1:30 pm to 3:00 pm)	Hands-on: Text Classification with Naive Bayes	
	Short Break(3:00pm to 3:15 pm)		
	Session 4 (3:15 pm to 4:30 pm)	Workshop Conclusion and Q&A	
	4:30 pm to5:00 pm	**Feedback and Valedictory Session**	

INNOVIANS TECHNOLOGIES

Trainer Profile

Vishwajeet S Rana
(Corporate Trainer)

Professional Experience

- Acquired 6.0 years' experience in Python, Embedded Systems, Machine Learning, Artificial Intelligence (AI), IoT-Internet of Things, MATLAB, Neural Networks, Android Application Design and Development.
- **Machine learning and AI tools:** Theano, SciKit, NumPy, SciPY, SVM, Fuzzy Logic, Neural Network, Pandas, MatplotLib implemented to develop machine learning algorithms instances linear regression, backward propagation, forward propagation, gradient descent, svm classification
- Specialized in Firmware Development for 8/32-bit microcontrollers, peripherals.
- Sound knowledge of programming in MATLAB,Embedded C, Arduino, Microcontrollers.
- Experience in Embedded Software Development.
- Good understanding of Embedded Software design and development.
- Having good experience in the Integration testing and individual module testing, board level debugging, analyzing design issues, on board testing.
- Good knowledge in debugging the synthesis issues.
- Analytical ability to understand the system and its implementation.
- Delivered more than 200 Training for Corporates & Institute all over Indian including various NITs & IITs.

Technical Skills

Programming Languages: JAVA, C, MATLAB , Embedded C, Python3.x.x, R.
Microcontrollers: AVR, Arduino, 8051, ARM7, ARM9 (Atmel, Phillips)
ARM Boards: Raspberry Pi, Beaglebone Black, STM32F401 Nucleo-64, Discovery.
Tools: Atmel Studio 4.0/6.0,Eagle,KiCad, Designspark, Keil uVision-3/4/5, Mplab, Eclipse, MCU 8051 IDE, Visual Studio.
Protocols: RS-232, I2C, SPI, UART,X-Bee,Bluetooth.
Communication simulator: Hyper Terminal, SSCOM, Teraterm.
Interfaces: GSM, GPS module, LCD, RTC, ADC, Keypads, Heat Sensors, IR Sensors, 7-Segment display, Relay boards, Counter, DC Motor etc.
Operating systems: Windows XP/Windows 7/8/10, Embedded Linux (Open SUSE, Ubuntu).

Artificial Intelligence & Machine Learning:

Project & Tools Description

- Development all machine learning problems in python.
- Multilayer ANN concept by using Tensorflow.
- RNN and CNN using Tensor Flow
- TFLearn library implementation from scratch to Neural Network Designing & Programming single perceptron and multi-layer hidden layers network.
- Deployment of machine learning & AI with all the AI & scientific tools Theano, SciKit, sciPY, NumPy, SVM, Fuzzy Logic, Pandas, MatplotLib on Anaconda IDLE using Python Jupyter,

INNOVIANS

Trainer Profile

Spider, IP[y] QT console.

- Regression problem, Gradient Descent Algorithm problem solving
- Implementation & development of supervised and unsupervised learning using python with pandas, MatPlotlib.
- Neural Architecture, designing Neural Network models with data training, correct prediction model, Forward propagation, backward propagation implementing by NumPY, Scipy, MatPlotLib,
- Intelligent prediction making problem models and implementation using Fuzzy Logic. Implementing formulation, defuzzification, rule base in training problem models for intelligent machine.
- Sklearn library implementation in machine learning.
- Database mining in machine learning, importing and exporting training data.
- SVM Classification, NLP.

Work Experience

- Working as Lead Trainer for Innovians Technologies from Jan, 2017.
- Worked as Sr. Research Engineer with Entrench Electronics Pvt. Ltd. From Nov, 2015 till Dec, 2016.
- Worked as Sr. Research Engineer with Robosapiens Technologies Pvt. Ltd. From Jul, 2013 till Nov, 2015.

Research Paper:

Successfully completed a project titled "**A New Multi-Resonant Frequency Microstrip Antenna with U-Shaped Patch for Wireless Communication**," Vishwajeet Singh Rana and Subodh Kumar Tripathi, International Journal of Computational Engineering & Management, ISSN: 2230-7893, Vol. 15, no. 4, pp. 17-19, Jan 2012

Education

B.Tech in Electronics & Communication Engineering.

AmithShankar

(Corporate Trainer)

SUMMARY

Example - 9+ years experienced ML Engineer with proven success in building successful algorithms & predictive models for different industries. Highly adept at clustering &classification, web scraping, data analysis & visualization to increase business efficiency. Passionate engineer & thriving analyst with the ability to apply ML techniques & algorithm development to solve real- world business problems.

KEY SKILLS

• Data Visualization • Predictive Analysis • Statistical Modeling • Training & Mentoring • Clustering & Classification • Data Analytics • Data Mining • Quantitative Analysis • Web Scraping • ML Algorithms • Model Development

TECHNICAL SKILLS

• Tools: Python, PostgreSQL, AWS, Hive, MongoDB, MapReduce, Spark,Linux
• Packages: Scikit-Learn, NumPy, SciPy, Pandas, NLTK, BeautifulSoup,Matplotlib, Statsmodels, Jupyter Notebook
• Statistics/Machine Learning: Statistical Analysis, Linear/Logistic Regression, Clustering, Graph Theory,Regularisations

PROFESSIONAL EXPERIENCE

Company Name: Innovians Technologies

Regression Modelling

- Compiled pricing data for competitive analysis by performing web scraping in Python
- Supervised model development, testing & validation of 100+ financial products and services
- Created charts in Jupyter Notebook to perform preliminary analysis & visualize data using Matplotlib

Predictive Modelling & Algorithm Development

- Predicted stock price with 98% accuracy to enable the company to make informed investments
- Determined optimal pricing strategies to facilitate the management of funds & achieve revenue goals
- Made multiple touch sensitive ML systems in all the officefloors to improve the company's safety networks
- Devised high-performance ML systems to detect abnormality, intrusion, fraud, masquerading, malware, etc.
- Developed an algorithm to understand customer behaviour leading to 95% success in targeted marketing

campaignsClustering & Classification

- Conceptualized & implemented a sentiment analysis tool torate the financial competence of companies
- Originated a recommendation engine to suggest an ideal cluster price for financial services offered by top companies

Leadership, Mentoring & Program Innovation

- Led a group of 10+ML Interns in producing a workable model to optimize the company's financial transactions
- Recruited & trained 5+ ML interns and supervised the project that were assigned to them as part of the internship
- Conducted 5+ ML workshop programs on the fundamentals of Python & machine learning to up-skill current employees

Education:

B.E in Computer Science and Engineerin

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(1)

Attendance - 'Machine Learning' Workshop(30/09/2019 to 04/10/2019)

Sl. No.	USN	Name of the Student	30/09/2019		01-10-2019		02-10-2019		03-10-2019		04-10-2019	
			Forenoon	Afternoon	Forenoon	Afternoon	Forenoon	Afternoon	Forenoon	Afternoon	Forenoon	Afternoon
1	4RA16CS001	AJITH										
2	4RA16CS002	AKASH C P										
3	4RA16CS003	AKSHITHA G R										
4	4RA16CS005	ANUSHA G P										
5	4RA16CS006	APEKSHA K GOWDA										
6	4RA16CS007	APOORVA E										
7	4RA16CS008	ARCHANA B C										
8	4RA16CS009	ARCHANA K M										
9	4RA16CS010	AYESHA SAMREEN										
10	4RA16CS011	B H DEEPIKA										
11	4RA16CS013	B S SURABHI										
12	4RA16CS016	BHUMIKA L										
13	4RA16CS017	CHAITRA P										
14	4RA16CS018	DARSHAN M N										
15	4RA16CS019	DEEKSHITH S P										
16	4RA16CS021	DEEPIKA K										
17	4RA16CS024	DHANYA K N										
18	4RA16CS025	DHANYASHREE K S										
19	4RA16CS026	DIVYA A S										
20	4RA16CS027	DIVYASHREE K										
21	4RA16CS029	HAJEERA KHANUM										
22	4RA16CS030	HIMALAKSHI K S										
23	4RA16CS035	KRUTHIKA S S										
24	4RA16CS036	LAVANYA S V										
25	4RA16CS038	LIKITHA PAL S D										
26	4RA16CS039	LOHITH A D										
27	4RA16CS042	MANISH KUMAR DEV										
28	4RA16CS043	MEGHANA G S										
29	4RA16CS045	MEGHANA M L										
30	4RA16CS049	MOHANKUMAR M C										
31	4RA16CS051	MOULYA K N										
32	4RA16CS053	NAMRATHA B.M										
33	4RA16CS056	NISARGA CHANDANA C										
34	4RA16CS057	NISCHITHA S KRISHNA										
35	4RA16CS059	NUTHAN B P										
36	4RA15CS095	SRIVIDYA C V										
37	4RA15CS109	VARUN H H										
38	4RA16CS015	BHAVANI J D										
39	4RA16CS037	LIKITHGOWDA H										
40	4RA16CS044	MEGHANA H A										
41	4RA16CS058	NOOR FATHIMA										
42	4RA16CS066	PRAJITHA M J										
43	4RA16CS068	PREETHALATHA S R										
44	4RA16CS069	PRIYA R										
45	4RA16CS070	RAGINI H P										
46	4RA16CS071	RAHUL H R										
47	4RA16CS072	RAJATH S KOUSHIK										
48	4RA16CS073	RAKESHGOWDA R										
49	4RA16CS084	SAVERA KULSUM										
50	4RA16CS085	SHAMANTHKUMAR S V										
51	4RA16CS086	SHIFA MARYAM										
52	4RA16CS087	SHREESHA										
53	4RA16CS088	SHWETHA T.R.										
54	4RA16IS026	SADIKABANU										
55	4RA16IS031	SNEHA K V										
56	4RA16IS032	SOUNDARYA B C										
57	4RA16IS035	SUSHMA N										
58	4RA16IS013	HARSHITH D										
59	4RA16IS027	SANGEETHA L										
60	4RA16IS030	SINDHU K R										
61	4RA16IS037	VISHNUPRIYA										
62	4RA16IS003	ASHA H M										
63	4RA16IS005	BHOOMIKA M N										
64	4RA16IS007	CHANDANA M T										
65	4RA16IS017	MANU H B										
66	4RA16IS002	AISHWARYA SHETTY C S										
67	4RA16IS015	KSHEMA H K										

68	4RA16IS021	PALLAVI ODEYAR										
69	4RA16IS022	PALLAVI S B										
70	4RA16IS001	ABHIJITH M R										
71	4RA16IS024	PREM KUMAR MENDEM										
72	4RA16IS036	VINUTHA J										
73	4RA16IS038	ZAINABKOUSAR										
74	4RA15IS013	HARSHITHA M S										
75	4RA15IS028	PRASHANTH .K GOWDA										
76	4RA15IS030	RACHANA H D										
77	4RA16IS033	SOWJANYA D										
78	4RA14IS006	AYESHA FERZEEN										
79	4RA14IS019	MEGHANA N										
80	4RA15IS024	NISHITHA H P										
81	4RA16IS010	GANAVI K										
82	4RA15IS009	AYESHA SIDDIQA										
83	4RA16IS012	HAMAD ASLAM										
84	4RA16IS028	SHABISTA TABASSUM										
85	4RA16IS029	SHASHANK M M										

Signature of HOD

Feedback analysis:

5 days' workshop on Machine Learning (30/9/2019 to 4/10/2019)

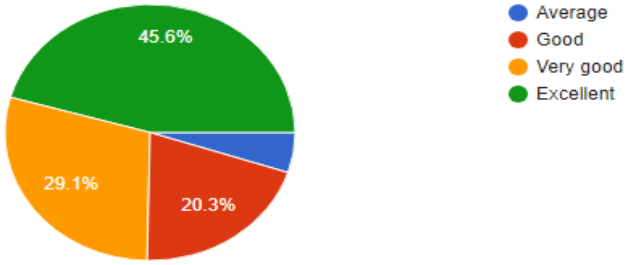
Feedback Form for "Machine Learning" workshop

Form description

Resource Persons Quality of Presentation

Copy

79 responses



Resource persons knowledge of the subject

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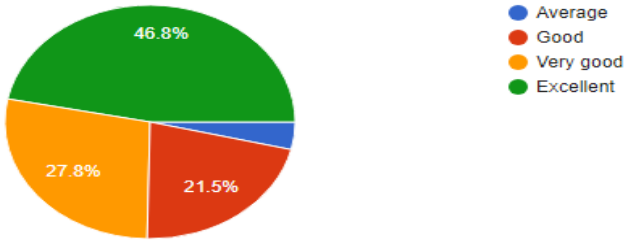
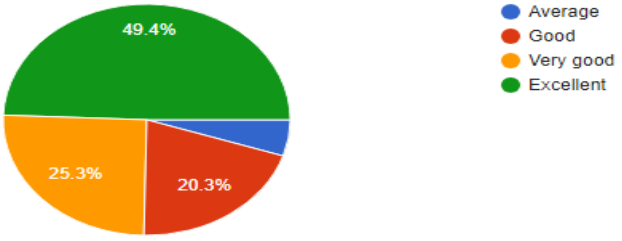
79 responses



Resource Persons were responsive to participants questions.

Copy

79 responses



Overall Satisfaction

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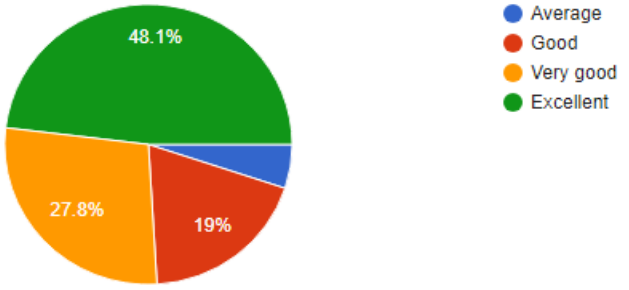
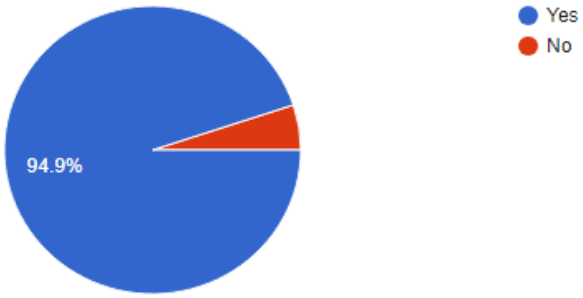
79 responses



Will you be interested in attending similar workshops?

Copy

79 responses



Certificates:

Photos:


Rajeev Institute Of Tecnology,Hassan
Welcome To
National Level Workshop On
MACHINE LEARNING


MACHINE LEARNING

Report on Machine Learning workshop(30th Sept 2019 to 4th Oct 2019)

Department of Computer Science and Engineering, organized 5 days workshop on "Machine Learning, from 30-09-2019 to 4-10-2019.The workshop started with greetings and inviting the dignitaries and trainers by Dr Prakash H N, professor and Head,Department of CSE, RIT, Hassan.

Day 1:

The Machine Learning Workshop offered an immersive learning experience that covered a range of essential topics. The introductory session provided participants with a clear understanding of machine learning's core principles and the diverse categories it encompasses. Subsequently, the exploration of data collection and preprocessing highlighted the significance of data quality for effective model development.
The hands-on session enabled participants to set up a Python environment and gain practical skills for data analysis. In the discussion on feature engineering, participants learned how to select and preprocess features to enhance model performance. The workshop's blend of theory, practical exercises, and real-world examples ensured a comprehensive grasp of machine learning's fundamentals and their application in solving complex problems.

Day 2:

The second day of the workshop focused on the realm of supervised learning, imparting a comprehensive understanding of its principles and practical application. Building upon this foundation, detailed discussions on linear regression and logistic regression illuminated the concepts of predictive modeling and classification. The hands-on session enabled participants to translate theory into practice by implementing linear regression, fostering a hands-on understanding of algorithm implementation.
The significance of accurate model evaluation was underscored during the evaluation metrics session, stressing the importance of metrics like accuracy, precision, recall, and F1-score in measuring model performance.

Day 3:

The third day of the workshop delved into the realm of unsupervised learning, expanding participants' horizons on clustering and dimensionality reduction techniques. The introduction to unsupervised learning set the stage for the day, highlighting its importance in pattern discovery and data exploration.
The K-Means Clustering session delved into one of the most popular clustering algorithms, elucidating its mechanisms and applications. . In the hands-on segment, participants engaged in practical implementation, experiencing firsthand the process of using K-Means to group data points.

Day 4:

The fourth day of the workshop was dedicated to the exciting domain of neural networks and deep learning. Beginning with an Introduction to Neural Networks, participants were introduced to the foundational principles and architectures of these powerful algorithms.

The subsequent session on Deep Learning and Feedforward Neural Networks provided a deep dive into constructing neural networks and understanding their layered structures. The hands-on segment enabled participants to practically implement their knowledge by building a Feedforward Neural Network, fostering practical expertise in neural network development.

Day 5:

The final day of the workshop delved into the intriguing world of Natural Language Processing (NLP). The Introduction to NLP session provided participants with a comprehensive overview of NLP's significance in analyzing and processing human language. Text Preprocessing and Tokenization followed, shedding light on the essential steps in preparing text data for analysis. The hands-on segment allowed participants to put their knowledge to practical use by engaging in Text Classification with Naive Bayes, showcasing the application of NLP techniques.
The workshop concluded with a Workshop Conclusion and Q&A session, providing participants with an opportunity to reflect on their learning journey, clarify doubts, and engage in a final exchange of ideas.