



# Institute for Development and Research in Banking Technology

(Established by Reserve Bank of India)

Castle Hills, Road No. 1, Masab Tank, Hyderabad-57, India.

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e-Programme on

## DEEP LEARNING AND REINFORCEMENT LEARNING FOR BANKS

January 31 – February 03, 2022

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### Introduction

Deep learning (DL), a new branch of machine learning, produced fantastic results in all disciplines including banking and finance. This field has transformed the way image processing and robotics are taught, researched and practiced. The latest branch of machine learning namely, deep learning made dramatic achievements in solving various difficult problems in all areas. Reinforcement learning also played an immense role in solving difficult problems with astonishing accuracies. It turns out that DL has solved important use cases in banking viz., customer acquisition, customer churn prediction, fraud detection, credit scoring, loan default prediction, sentiment analysis, time series forecasting, Robotic process automation and chatbots. Successful implementation of DL and RL makes the digital journey of a banks profitable, and sustainable.

### Objectives

- To make the participants aware of need and nuances of the deep learning architectures for solving business and operational problems in banking industry
- To convince them with use cases, case of studies, and PoCs conducted at the Centre of Excellence in Analytics, IDRBT

### Contents

- Introduction to Deep learning methods (DL)
- DL use cases in Banking
- Introduction to Reinforcement learning (RL)
- RL use case in Banking

### Mode of Teaching

Online teaching plus learning inputs through reading material, videos, webinars, assignments, quizzes, online interactions and clarifications. Each e-Programme will have four live webinars and course material will be made available in advance for study.

### Who Can Participate?

Officers and executives up to and including GM level from digital banking, transaction banking, planning, marketing, IT, Security

### End Use:

- Participants shall be on boarded to this exciting field, several new concepts will be introduced.
- Participants can appreciate the use case of using DL and RL
- They will be ready for a full-fledged, rigorous hands-on training on these subjects.

### Programme Coordinator:

**Dr. V. Ravi**, Professor, IDRBT

Email: [vravi@idrbt.ac.in](mailto:vravi@idrbt.ac.in)

### Fees:

#### **For Indian Participants**

- RRBs & Coop Banks: Rs. 11,800/- (Rs. 10,000/- + 18% GST)
- All Other Banks & Financial Institutions: Rs. 14,750/- (Rs. 12,500/- + 18% GST)

#### **For International participants**

- US \$ 220 (per participant, All inclusive)

### Bank Account Details for Remittance of Fees

The fees for this e-programme can be remitted to the following accounts:

#### **For Indian Participants**

Account Name : IDRBT  
Bank & Branch : Axis Bank Limited, Humayun Nagar, Mehdiapatnam, Hyderabad  
Account No. : 426010100018823  
MICR Code : 500211012  
IFSC Code : UTIB0000426

#### **For International participants**

Receiver's Correspondent Bank : JP Morgan Chase, New York, USA  
Swift Code : CHASUS33XXX  
Fed Wire Routing Number : ABA 021000021  
Beneficiary Bank & Branch : Axis Bank Ltd., Mumbai, India  
Account Number : 0011407376  
Beneficiary Bank Swift Code : AXISINBB

#### **Ultimate Beneficiary**

Account Name : IDRBT  
Customer ID : 030021632  
Account No. : 426010100018823  
Bank & Branch : Axis Bank Ltd., Jubilee Hills, Hyderabad, India. (AXISINBB030)

### Nominations

Banks may nominate any number of participants to these e-Programmes, which may be accepted on a first-cum-first-served basis. While nominating, please provide the details of the participants (Name, Designation, Bank, Mobile No/Phone No, email address, fees billing address, GST No. of the Bank).

Apart from nominations by banks, staff members of banks can self-nominate themselves for these e-Programmes by providing their employee credentials and paying the programme fee latest by **January 28, 2022**.

## How to Register

The nominations for these e-Programmes, and queries if any, may please be sent to [eprogram@idrbt.ac.in](mailto:eprogram@idrbt.ac.in). Please visit <https://www.idrbt.ac.in/eprogrammes> for more details about these programmes.

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### e-Programmes in January 2022

S. No.	Name of the e-Programme	Date	e-Programme Coordinator	Last Date for Nomination
1	Security Operations Centre	03 – 06	Dr. V. Radha	<b>Dec 31, 2021</b>
2	Secure Financial Infrastructure	04 – 07	Dr. Susmita Mandal	<b>Jan 03, 2022</b>
3	Smart Banking using AI and ML	10 – 13	Dr. Mridula Verma	<b>Jan 07, 2022</b>
4	Emerging Technologies for Banking	18 – 21	Dr. Rajarshi Pal	<b>Jan 17, 2022</b>
5	Introduction to Containers	18 – 21	Dr. P. Syam Kumar	<b>Jan 17, 2022</b>
6	Cyber Forensics for Cyber Defence - A Proactive Approach	18 – 21	Dr. B. M. Mehtre	<b>Jan 17, 2022</b>
7	Introduction to Authentication Techniques	Jan 31 – Feb 03	Dr. M.V.N.K. Prasad & Dr. N.P. Dhavale	<b>Jan 28, 2022</b>
8	Deep Learning and Reinforcement Learning for Banks	Jan 31 – Feb 03	Dr. V. Ravi	<b>Jan 28, 2022</b>

### e-Programmes in February 2022

S. No.	Name of the e-Programme	Date	e-Programme Coordinator	Last Date for Nomination
1	Threats to Digital Payment Ecosystem	01 – 04	Dr. Susmita Mandal	<b>Jan 31, 2022</b>
2	Distributed Ledger Technology and Banking Applications	07 – 10	Dr. N. V. Narendra Kumar	<b>Feb 04, 2022</b>
3	IT Project Management	08 – 11	Dr. Abhishek Thakur	<b>Feb 07, 2022</b>
4	Technologies for Financial Inclusion	08 – 11	Dr. M. V. N. K. Prasad	<b>Feb 07, 2022</b>
5	Video Analytics in Banking & Finance	14 – 17	Dr. Mridula Verma	<b>Feb 11, 2022</b>
6	Malware Analysis	15 – 18	Dr. Rajarshi Pal	<b>Feb 04, 2022</b>
7	Dark Web Monitoring for Threat Intelligence	15 – 18	Dr. B. M. Mehtre	<b>Feb 14, 2022</b>
8	RBI Guidelines on Cyber Security	21 – 24	Dr. Dipanjan Roy	<b>Feb 18, 2022</b>
9	Virtualization and Cloud Computing	22 – 25	Dr. P. Syam Kumar	<b>Feb 21, 2022</b>
10	API Security and Governance	Feb 28 – Mar 03	Dr. Abhishek Thakur	<b>Dec 27, 2021</b>

### e-Programmes in March 2022

S. No.	Name of the e-Programme	Date	e-Programme Coordinator	Last Date for Nomination
1	Workshop on Registration Authority Operations	01 – 04	Dr. N. P. Dhavale	Feb 28, 2022
2	AI/ML and Data Science for Banks	01 – 04	Dr. V. Ravi	Feb 28, 2022
3	Proactive Cyber Defence Strategies	07 – 10	Dr. Dipanjan Roy	Mar 04, 2022
4	Introduction to Authentication Techniques	08 – 11	Dr. M. V. N. K. Prasad & Dr. N. P. Dhavale	Mar 07, 2022
5	Recent Cyber Crimes and Defences	08 – 11	Dr. Rajarshi Pal	Mar 07, 2022
6	Data Centre Management	14 – 17	Dr. P. Syam Kumar	Mar 11, 2022
7	Emerging AI/ML Technologies	14 – 17	Dr. Mridula Verma	Mar 11, 2022
8	Big Data Analytics through Elastic Map Reducer for Banks	21 – 24	Dr. V. Ravi	Mar 11, 2022
9	Mobile Banking, Social Media Banking and Mobile Security Testing	21 – 25	Dr. V. N. Sastry	Mar 18, 2022
10	Targeted Attacks - Detecting in Early Stages	22 – 25	Dr. B. M. Mehtre	Mar 21, 2022
11	Secure Coding Practices	22 – 25	Dr. V. Radha	Mar 21, 2022
12	Re-envisioning Digital Banking Systems	28 – 31	Dr. Susmita Mandal	Mar 25, 2022

### e-Programmes in April 2022

S. No.	Name of the e-Programme	Date	e-Programme Coordinator	Last Date for Nomination
1	Distributed Ledger Technology and Banking Applications	04 – 07	Dr. N. V. Narendra Kumar	Apr 01, 2022
2	Technologies for Financial Inclusion	04 – 07	Dr. M.V.N.K. Prasad	Apr 01, 2022
3	Workshop on Registration Authority Operations	05 – 08	Dr. N. P. Dhavale	Apr 04, 2022
4	AI/ML for Cyber Security	05 – 08	Dr. Rajarshi Pal	Apr 04, 2022
5	Adversarial ML for Banks	18 – 21	Dr. V. Ravi	Apr 13, 2022
6	Smart Banking using AI and ML	18 – 21	Dr. Mridula Verma	Apr 13, 2022
7	Cyber Forensics for Cyber Defence - A Proactive Approach	19 – 22	Dr. B. M. Mehtre	Apr 18, 2022
8	API Development	19 – 22	Dr. V. Radha	Apr 18, 2022
9	Future of Innovative Smart Banking	25 – 28	Dr. Susmita Mandal	Apr 22, 2022
10	Security in Cloud Computing	26 – 29	Dr. P. Syam Kumar	Apr 25, 2022
11	Introduction to Hardware Security	26 – 29	Dr. Dipanjan Roy	Apr 25, 2022

## e-Programmes in May 2022

S. No.	Name of the e-Programme	Date	e-Programme Coordinator	Last Date for Nomination
1	Re-imagining customer engagement with conversational Chatbots	09 – 12	Dr. Mridula Verma	May 06, 2022
2	Introduction to Governance, Risks and Compliance	10 – 13	Dr. Abhishek Kumar Thakur	May 09, 2022
3	Continuous Security Validation	10 – 13	Dr. V. Radha	May 09, 2022
4	Secure Financial Infrastructure	10 – 13	Dr. Susmita Mandal	May 09, 2022
5	Cyber Security for Remote Working Scenario	17 – 20	Dr. Rajarshi Pal	May 16, 2022
6	Proactive Cyber Defence Strategies	17 – 20	Dr. Dipanjan Roy	May 16, 2022
7	Dark Web Monitoring for Threat Intelligence	17 – 20	Dr. B. M. Mehtre	May 16, 2022
8	Introduction to Authentication Techniques	23 – 26	Dr. M.V.N.K. Prasad Dr. N.P.Dhavale	May 20, 2022
9	Explainable AI for Banks	24 – 27	Dr. V. Ravi	May 23, 2022
10	Big Data and Cloud	24 – 27	Dr. P. Syam Kumar	May 23, 2022

## e-Programmes in June 2022

S. No.	Name of the e-Programme	Date	e-Programme Coordinator	Last Date for Nomination
1	Privacy Preserving Machine Learning for Banks	06 – 09	Dr. V. Ravi	June 03, 2022
2	Distributed Ledger Technology and Banking Applications	06 – 09	Dr. N. V. Narendra Kumar	June 03, 2022
3	5G Use Cases and IoT Applications for Banks	06 – 10	Dr. V. N. Sastry	June 03, 2022
4	Threats to Digital Payment Ecosystem	07 – 10	Dr. Susmita Mandal	June 06, 2022
5	Technologies for Financial Inclusion	07 – 10	Dr. M.V.N.K. Prasad	June 06, 2022
6	Emerging AI/ML Technologies	13 – 16	Dr. Mridula Verma	June 10, 2022
7	Workshop on Registration Authority Operations	14 – 17	Dr. N. P. Dhavale	June 13, 2022
8	Privacy and Security Risks in Machine Learning	14 – 17	Dr. Rajarshi Pal	June 13, 2022
9	RBI Guidelines on Cyber Security	20 – 23	Dr. Dipanjan Roy	June 17, 2022
10	Introduction to Containers	21 – 24	Dr. P. Syam Kumar	June 20, 2022
11	Targeted Attacks - Detecting in Early Stages	21 – 24	Dr. B. M. Mehtre	June 20, 2022
12	API Development	Jun 28 – Jul 01	Dr. V. Radha	June 27, 2022