



# INSTITUTE FOR DEVELOPMENT AND RESEARCH IN BANKING TECHNOLOGY

*(Established by Reserve Bank of India)*

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## **CALL FOR PAPERS FOR 12<sup>TH</sup> IDRBT DOCTORAL COLLOQUIUM**

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### **THE INSTITUTE**

The Institute for Development and Research in Banking Technology (IDRBT) is the premier Institute of Banking Technology in India. Established by Reserve Bank of India in 1996, the Institute spearheads efforts in providing state-of-the-art technologies for the Indian Banking and Financial Sector.

Right from creating Technology Infrastructure, engaging in cutting-edge Development and Research, to moulding the Technology Talent required for the Banking and Financial Sector, IDRBT enables the technology transformation of the Indian Banking and Financial Sector. IDRBT is the only Institute in the country exclusively focused on the niche area of Banking Technology.

IDRBT is actively engaged in a number of high-impact Research Projects aimed at developing the standards and systems of Banking Technology in India. The Institute provides Advisory and Consultancy Services to Banks and Financial Institutions on various technology matters. IDRBT is a Scientific and Industrial Research Organisation (SIRO), recognised by the Department of Scientific and Industrial Research, Ministry of Science and Technology, Government of India.

The Institute has collaborations with premier Institutions such as IIT Bombay, IIT Madras, IIT Hyderabad, University of Hyderabad, NIT Warangal and NIT Trichy for a collaborative PhD programme in various areas of Computer Science with a focus on applicability in the Indian Banking and Financial Sector. The Institute in collaboration with the University of Hyderabad offers a unique M.Tech. programme in Information Technology (with specialisation in Banking Technology and Information Security). The Institute's Post Graduate Diploma in Banking Technology (PGDBT) has emerged as a key source for the Indian Banking and Financial Sector to recruit technology specialists to drive their technology initiatives. IDRBT also offers Post-Doctoral Fellowships to carry out advanced research in areas that are directly relevant for the Indian Banking and Financial Sector.

The vision of the IDRBT is "to be the premier and preferred Research and Development Institution on Financial Sector Technology and its Management, working at the intersection of Banking and Technology for the Indian Banking."

## IDRBT DOCTORAL COLLOQUIUM

With the objectives of exploring emerging areas of research, sharing knowledge and learning from each other the latest in various areas of technology, the Institute announces the 12<sup>th</sup> IDRBT Doctoral Colloquium. The colloquium will be held on December 12-13, 2024 at the Institute for Development and Research in Banking Technology (IDRBT) campus in Hyderabad, India.

Apart from sessions wherein PhD scholars present their research and get feedback from the academic community, the colloquium would feature invited talks from eminent researchers on emerging areas of technology. The Colloquium involves extensive participation of faculty members and technical experts from IDRBT as well as from other top technical institutes, banks, financial institutions, and industry in various capacities such as reviewers, presenters and members of Jury. The Doctoral Colloquium marks a significant effort towards bringing together the best and latest in technology research related to Banking.

Accordingly, students conducting doctoral research (PhD) in different areas of Computer Science, Information Technology, Information Systems, Information Security, Banking Technology or closely related areas are invited to participate in the Colloquium.

## CALL FOR PAPERS

This Colloquium provides an opportunity for budding researchers pursuing their full-time PhD to present and discuss their research ideas, problems, build a strong network and get invaluable feedback. The colloquium invites submissions in the areas mentioned below as well as other closely related areas of technology with an application to Banking and Financial Technology:

- **Applied Cryptography:** Access Control, Anonymity and Privacy, Cryptographic Protocols, Key Management, Key Agreement Protocols, Privacy Enhancing Techniques-Zero-knowledge Proofs, Secure Multiparty Computation, Differential Privacy, Homomorphic Encryption, Public Key Cryptography, Light Weight Cryptography, Post-quantum Cryptography, Quantum Computing, Quantum Communications
- **Authentication and Identity Management:** Pattern Recognition, Image Processing, Multimodal Biometrics, Physiological and Behavioural Biometrics, Multi-factor Authentication, Single Sign-on, Privacy Preservation, Digital Rights Management
- **Cyber Security:** Network Security, Web Security, Application Security, Malware Analysis, Hardware Security, IoT Security, Mobile Security, Software Security, Information Security, Security Testing, Digital Forensics, Cyber Defence, Recent Trends in Cyber Attacks and Mitigation Techniques, Vulnerabilities and Controls, Formal Verification Methods
- **Data Centres, Virtualisation and Cloud Computing:** Green Computing, Open Source Technologies, Architectures, Security and Privacy, Edge and Fog Computing, Micro Services, Multi-Access Edge Computing, Data Center Management, Data Security and Privacy, Scalability and Performance, Big Data and NoSQL Databases, Graph Databases.

- **Data Science:** Artificial Intelligence (Subsuming Explainable AI, and Causal Inference) & Machine Learning (subsuming Reinforcement Learning, Deep Learning, Deep RL, LLMs, Adversarial ML, Auto ML, Privacy-Preserving ML, and MLoPS), Big Data Analytics (subsuming streaming data analytics), Social Media Analytics, Financial Fraud Analytics, Chatbots, Robotic Process Automation, Data Warehouse/Data Lake/Data Lakehouse, Predictive and Prescriptive Analytics, Information Retrieval and Extraction, Query Processing and Optimization
- **Mobile Computing and 5G:** Banking Apps, Security Testing, Network Orchestration, 5G Use Cases for BFSI, Multilingual Services, Mobile Governance, Mobile Edge Computing, Augmented Reality, Virtual Reality, Sensor Based Threats, Wireless Networks: BAN, LAN, WAN, LoRa, WiFi, 5G/6G, Satellite, IoT networks, Control Plane - Management, Orchestration and Composition: Core Services in 5G/6G, Slicing, Management and Network Exposure APIs, Mobility Management.
- **Payment Channels and Systems:** Digital Currency, Card Payments, ATM, PoS Devices, Mobile Payments, Drones, Blockchain, Distributed Consensus Protocols, Distributed Ledgers, Wallets, Protocols for Secure Transactions, Decentralized Finance(DeFi), Smartcards, Secure Tokens, and Secure Hardware.
- **Program Analysis:** Dataflow, Control-flow Integrity, Secure Programming Practices, Open APIs
- **Use Cases and Experience:** Banking Apps, Security Testing, Multilingual Services, AR/VR, Machine Triggered Transactions, Green / Zero-impact / Carbon-credit, Mobile Governance, Augmented Reality, Virtual Reality, Metaverse, Sensor based Threats, Micro-Insurance, Trading, Post-disaster Payments, Account-aggregator, Lending and Fraud, Auditing, AI/ML Applications
- **Web Services:** Semantics, Ontologies, Discovery and Secure Composition, SoA, Internet Banking, Customer Education

The copyright of the work presented in the colloquium shall rest with the author. However, the Institute would publish the title and abstract of the work presented in the Institute's newsletters/reports.

## ELIGIBILITY

Research Scholars currently enrolled in any Indian Institute for full-time PhD in any discipline directly related to the above-mentioned areas and have completed a minimum of two years of research after enrolling for full-time Ph.D. are eligible to participate in the Colloquium. Candidates who have applied to the IDRBT Doctoral Colloquium previously and who have already defended their PhD thesis need not apply.

## SUBMISSION GUIDELINES

Submitted papers should give a clear description of the PhD work being conducted by the author of the paper. In particular, papers must:

- Provide a clear problem statement, outlining the research challenges that drive the proposed work
- Describe the proposed solution with research methodology, its expected impact, and preliminary results
- Discuss the potential improvements the work will have on the state-of-the-art
- Compare the research outcomes with current literature and approaches (cite key papers)
- Potential applications in the Banking and Financial Sector

Submissions must be formatted according to the following templates: MS Word; Latex; Latex Bibliography.

Each paper must be at most six pages in length including figures, tables, references and annexures if any. Please email a scanned copy of your Institutional Identity Card to [idc@idrbt.ac.in](mailto:idc@idrbt.ac.in), and mention "<your name> – ID card" in the subject line of the email.

The above guidelines are strictly enforced, and papers not adhering to these guidelines risk rejection without a review.

A single PDF file should be submitted through [Easy Chair Submission System](#) latest by August 01, 2024.

## DEADLINES

- Paper Submission: **August 01, 2024**
- Notification of Acceptance: **October 15, 2024**
- Camera-ready Papers: **December 02, 2024**
- 12<sup>th</sup> IDRBT Doctoral Colloquium: **December 12 – 13, 2024**

## HOSPITALITY & TRAVEL

All scholars whose papers / proposals are accepted by the Institute would be reimbursed Third A/C to and fro rail fare from the Research Scholar's Institute/Organisation to participate in the Colloquium. Further, Scholars will also be provided free boarding and lodging in the Institute's campus in Hyderabad during the Colloquium.

## **REWARD**

An eminent jury will evaluate the papers and the presentations and the top three scholars would receive prizes of INR 1,00,000/- (Rupees One Lakh), INR 50,000/- (Rupees Fifty Thousand) and INR 35,000/- (Rupees Thirty-Five Thousand) respectively in order of their standing. All presenters will also receive a certificate of participation.

## **COORDINATORS**

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