ADScAI

Applied Data Science & Artificial Intelligence Symposium

PROCEEDINGS OF

Applied Data Science & Artificial Intelligence Symposium 2025

ORGANIZED BY

THE DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING,
UNIVERSITY OF MORATUWA

COMMEMORATING THE 40TH ANNIVERSARY OF CSE

Computer Science & Engineering
University of Moratuwa

Proceedings of ADScAI Symposium 2025

1st Applied Data Science & Artificial Intelligence Symposium
8th April 2025

Applied Data Science & Artificial Intelligence Symposium (ADScAI)
www.adscai.cse.uom.lk

ADScAI 2025, 8th April 2025

Conference mode: Onsite

Conference organized by: Department of Computer Science & Engineering,
Faculty of Engineering,
University of Moratuwa

ISSN 3121-3103

9 773121 310006

Published by:
Department of Computer Science & Engineering,
Faculty of Engineering,
University of Moratuwa,
Katubedda, Moratuwa, 10400, Sri Lanka.

Message from the Dean, Faculty of Engineering

Prof. Jagath Manatunge
Dean
Faculty of Engineering
University of Moratuwa

It is with great pride and enthusiasm that I extend my warmest congratulations to the Department of Computer Science and Engineering as you celebrate your remarkable 40th anniversary by organizing yet another remarkable event: the Applied Data Science & Artificial Intelligence Symposium (ADScAI) 2025.

The rapid advancement of technology, particularly in the fields of data science and artificial intelligence, continues to redefine the boundaries of what is possible, opening new horizons in every sector of engineering and beyond. Our collective journey towards innovation and technological excellence is strongly influenced by the pioneering efforts and intellectual rigor exemplified by our colleagues in Computer Science and Engineering.

This symposium, focused on the cutting-edge disciplines of Applied Data Science and Artificial Intelligence, is not just a celebration of past achievements but a visionary step towards shaping the future. It provides a vital platform for researchers, industry experts, and students to collaborate, innovate, and explore solutions for real-world challenges, reinforcing the commitment of our university to leadership in technological advancement and societal development.

I commend the organizing committee for their dedication and meticulous preparation in curating a symposium that aligns perfectly with contemporary global trends and addresses pivotal challenges facing our societies today. I am confident that the proceedings documented from this event will serve as a rich resource, fostering knowledge exchange and inspiring further innovation in our academic community and beyond.

I wish the Applied Data Science & Artificial Intelligence Symposium 2025 a resounding success and congratulate once again the Department of Computer Science and Engineering and the organizing committee for their continued excellence and impactful contributions to the field.

Message from the General Chair

Dr. T. Uthayasanker
General Chair
Applied Data Science & Artificial
Intelligence Symposium (ADScAI 2025)

It is with great pleasure that I welcome you to the inaugural Applied Data Science & Artificial Intelligence Summit (ADScAI), organized by the Department of Computer Science and Engineering at the University of Moratuwa. This symposium serves as a vibrant forum for researchers, practitioners, and industry leaders to exchange ideas, present novel contributions, and discuss the latest advancements in data science and artificial intelligence.

Sri Lanka is at a pivotal moment in its digital transformation journey, with national initiatives emphasizing AI-driven innovation, data-driven decision-making, and the integration of intelligent systems into key sectors. As the country moves towards adopting AI and data science in governance, education, healthcare, and industry, ADScAI provides a timely opportunity to align academic research with these national priorities. The discussions and collaborations fostered through this symposium will contribute to shaping policies, developing ethical AI frameworks, and accelerating technological adoption in Sri Lanka.

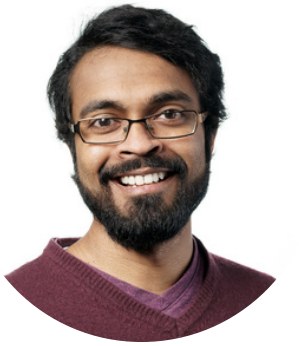
The overwhelming response to the first edition of ADScAI has been truly remarkable, with over 150 article submissions from researchers across diverse domains. With a rigorous review process and a 48% acceptance rate, we have ensured that only high-quality and impactful research is presented, reflecting the depth and breadth of innovation in AI and data science.

By bringing together thought leaders and experts, ADScAI aims to bridge the gap between theoretical advancements and real-world applications. The insights shared here will not only advance AI research but also support Sri Lanka's efforts in building a robust digital economy and a future-ready workforce.

I extend my sincere gratitude to the organizing committee, reviewers, authors, and sponsors who have contributed to making this event possible. Your efforts have helped establish ADScAI as a cornerstone for meaningful discussions and impactful research in AI and data science.

I invite all participants to engage actively, exchange ideas, and explore collaborations that will drive the future of AI in Sri Lanka and beyond. Let us work together to shape an AI-powered future that is ethical, inclusive, and beneficial for all.

Message from the Program Chair



Dr. Thanuja Ambegoda
Program Chair
Applied Data Science & Artificial Intelligence Symposium (ADScAI 2025)

It is my pleasure to welcome you to the inaugural Applied Data Science & AI Symposium 2025 (ADScAI 2025). This symposium marks the beginning of an exciting journey where researchers, practitioners, and industry leaders come together to explore the transformative impact of data science and artificial intelligence across domains.

In recent years, AI and data-driven technologies have reshaped industries, accelerated scientific discoveries, and influenced decision-making at an unprecedented scale. As we navigate this rapidly evolving field, ADScAI 2025 serves as a platform to share knowledge, present innovative solutions, and foster collaborations that drive real-world impact.

This year's program features a diverse range of research contributions, and thought-provoking discussions. The accepted papers reflect both theoretical advancements and practical applications, highlighting the growing synergy between academia and industry in solving pressing challenges.

I extend my deepest gratitude to the authors, reviewers, and the Organizing Committee for their dedication in making this symposium a success. A special thanks to our reviewers, organizers, volunteers, and sponsors for their invaluable contributions. Your collective efforts have shaped a rich and engaging program.
I invite you to immerse yourself in the discussions, connect with fellow researchers, and take full advantage of the opportunities ADScAI 2025 offers. Let this symposium be the start of meaningful collaborations and groundbreaking innovations in applied data science and AI.

Message from the Publications Chair

Dr. Buddhika Karunarathne
Publications Chair
Applied Data Science & Artificial Intelligence Symposium (ADScAI 2025)

On behalf of the publications committee, we are delighted to present this collection of extended abstracts from the Applied Data Science and Artificial Intelligence (ADScAI) Symposium by the Department of Computer Science & Engineering (CSE), University of Moratuwa.

The symposium is part of many events in the line up for the 40th Anniversary celebrations of the Dept. of CSE. This proceedings encapsulates the innovative research, insightful analyses, and practical applications shared by the esteemed contributors.

We extend our sincere gratitude to all authors, reviewers, and attendees for their dedication and participation, which have collectively enriched this endeavour. We hope this volume serves as a valuable resource for researchers, practitioners, and enthusiasts alike, fostering further exploration and collaboration in the ever-evolving landscape of Data Science and AI.

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