



ATMANIRBHARBHARAT - ARTIFICIAL INTELLIGENCE A STRATEGIC SYNERGY BETWEEN IT AND DEFENCE

IT for Defence 2021 -22

Hybrid Conference by CSI Bangalore Chapter & SIG-Formal Methods Computer Society of India

Date: February 3-4, 2022

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About the Conference

CSI-BC has been pioneering to bring the various DRDO labs and the defence services together over the years by organizing the Conference on Information Technology in Defence (ITD) annually. The last one was held in December 2020 on the theme IT in Defense Manufacturing. In this edition, the theme chosen is **Atmanirbhar Bharat - Artificial Intelligence - A unique Synergy between IT and Defense.**

Globally, the Defence technology is going thru major innovations to face challenges in national security. With advent of Atmanirbhar Bharat promoted by GoI, it is imperative for every defense user and supplier of India to revisit their offerings. Innovation, Collaboration, Partnership, Betterment of Defense performance using AI, IT, IP Protection, Methods, Standards and Rights are critical requirements to ensure to meet the goals. The program is conceived with inputs from very senior advisors from forces, DRDO labs.

Artificial Intelligence (AI) has started to play an increasing role in all aspects of Information Technology (IT) defence equipments and in Information Communications Technology (ICT). In defence also AI is playing increasing role in all aspects of Defence from the Development of Defence products to the operational and deployment of Defence weapons to the strategies in the battlefield and to the maintenance and end use of the defence weapons. The defence weapons could be of a offensive type or defensive type, they could be ground based, airbased, sea based orspace based. They could be manned or unmanned types. AI Plays critical role on all modern defence equipment. AI has advanced to such an extent that it is widely used.

Computer Society of India wants the field of Formal Methods to be part of this event which also uses AI/MI and thus have a wider audience and more people to benefit from the application of these methods to all spheres of life. There is a need to use effective, correct and reliable approaches to design, develop and qualify complex, high assurance system software with the rigid schedules and budget. For this we need advanced tools, techniques and methods. Industry standards like RTCA DO-178C (Civil Aerospace), ISO 26262 (Automotive), IEC 61513(Nuclear), EN50126 (Railways) have recommended the usage of formal - method-based approach to be used in the various phases of engineering process to achieve the required levels of safety and security.

Today there are proven techniques and tools that can be used in specification, design and verification & validation phases to assure correct requirement-capture, implementation, software functionality and security. This helps in developing high assurance software for applications such as cyber-physical systems, net-centric warfare systems, autonomous robots and Next Generation Air Transportation.

This conference is to bring all the different people on a single platform to discuss the status of its use in Defence systems, its availability, its future and and and explore new avenues. This will hopefully

About CSI

Computer Society of India (CSI) is the largest IT user society in India with 72 chapters across the country and with nearly a hundred thousand members. The vision of CSI is to facilitate research, knowledge sharing and profession enrichment among IT professionals across industry segments. Various Special Interest Groups such as Information Security, Data Analytics, Artificial Intelligence, e-Governance evangelize the use of technologies. CSI has been organising various seminars, conferences, and technical talks periodically. IT for Defence (ITD) is one such flagship event of the CSI.

CSI BC and SIG for Formal Methods have been conducting ITD every other year and this is the 13th in the series.

PROGRAM

INAGURAL SESSION

WELCOME Address CHIEF GUEST: Dr. Girish S Deodhare Distinguished Scientist, Director General PGD(CA), Director - ADA

TECHNICAL SESSIONS

TRACK- 1 : Digital Technologies in Defense Mission

Session 1: AI Integrated in Weapon Systems (Defensive & Offensive Systems)

Session 2: Significance of AI in Defence Platforms (Aircraft, UAVs Naval Ships, Submarine , Tanks etc.)

TRACK- 2: Digital Technologies in Communications systems

Session 1: AI in Electronics (networks, radars, 5G, sensors, IR)

Session 2: Formal methods and Application of formal methods for safety critical applications

SPEAKER-1 Dr. Manju Nanda

Topic: Formal Methods in Aerospace:Indian Prospective

Session 3: Integration AI, ML & IOT for Proactive Support Systems

SPEAKER-1: Dr. Ramakrishnan Raman

Topic: Machine Learning Models for Behavior & Performance Predictions in Complex Airborne Systems

TRACK-3: AI in Digital Technologies, Defence Organisation Functioning

Session 1: AI in support Systems, Army bases, Airforce bases, Naval Bases.

Session 2: Integration of AI in Defence Logistics

Session 3: AI Supported Defence Learning and Development Systems

PANEL DISCUSSION:

Theme: Defense Digitalization & AI for enhanced efficiency

CONCLUSION

REGISTRATION

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