

From: Muhammed Akif AGCA
Sent: Friday, August 19, 2022 6:30 AM
To: aiframework <aiframework@nist.gov>; Mehmet Aksit
Cc: Sriram, Ram D. (Fed) ; Muhammed Akif Agca; Muhammed Akif AĞCA; Atakan Peker
Subject: Response to Comment Request --->>> NIST Seeks Comments on AI Risk Management Framework Guidance, Workshop Date Set

Dear Sir/Madam,

Please see my attached (1) recent survey and the solution paper initial version (2) as reply to comment requests.

1- Ağca, M. A., Faye, S., & Khadraoui, D. (2022). A Survey on Trusted Distributed Artificial Intelligence. *IEEE Access*.

2- Ağca, M. A. (2019, December). A holistic abstraction to ensure trusted scaling and memory speed trusted analytics. In *2019 International Conference on Computational Science and Computational Intelligence (CSCI)* (pp. 1428-1434). IEEE.

Furthermore, if there is interest we can define a joint research with NIST also within the scope of below abstracts. Thanks for the interest again;

-Muhammed

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SESSION 27-ICAI: ARTIFICIAL INTELLIGENCE + NOVEL ALGORITHMS AND APPLICATIONS Chair:
TBA July 28, 2022 (Thursday); 03:20pm - 06:20pm (LOCATION: Galleria Ballrooms D & E) 04:40 - 05:00pm.
brainIT: A Generic IT Core Mechanism for Continuous Growth-Flow in Dynamic Chaotic Context

Muhammed Akif AĞCA

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Abstract: Brain CAPEX (Capital Expenses) is for free to the human being but the OPEX (Operational Expenses) is not. Since, the fluctuations on critical nutrition for brain makes it complicated to grow via optimal path as continues progress due to the chaotic OPEX changes. Fortunately, intelligent systems are able to adapt the change dynamically up to varying chaotic context, by keeping trustworthiness of the whole system via available distributed resources and algorithms. However, increasing number of nodes in the system inflates complexity of swarm behavior due to computation and memory limitations. Drastic progress saved in the emerging edge devices, can enable to produce innovative trusted AI/ML algorithms at run-time, which can help to make massive analytics at the edge nodes in (near) real time. In spite of this, keeping the system resilient require real-time updates in different system layers. As another critical milestone, increased scalability and faster in memory processing speed can be accomplished via big data technologies and ledger base chained structures in some manner. In order to keep high performance of the total system, mission/safety/operation critical applications require to be verified by critical check-points. Thereby, end-to-end trust mechanism and swarm controller methods can improve trusted scalability of the intelligent systems analytical functions and resources. So that, the dynamic holistic views can ensure trustworthiness in chaotic context with the brainIT generic IT core mechanism for continuous growth in massive-chaos, which ensures to keep local/global legal constraints-based risk minimization via 5G connected hybrid-cloud systems within the observed socio-dynamic parameters with minimized optimal OPEX costs.

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SESSION 28-PDPTA-ICEQT: PARALLEL & DISTRIBUTED PROCESSING + EMERGENT QUANTUM
TECHNOLOGIES Chair: TBA July 28, 2022 (Thursday); 08:20am - 10:20am (LOCATION: Galleria Ballroom A)
09:20 - 09:40am.

End-to-end Trusted Execution Environment (TEE) with Dynamic Holistic View Based Throughput Maximization Approach

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Abstract: Drastic progress and improvements on classical behavior modelling approaches; such as, cellular automata, chaotic systems, hierarchical block diagram modeling methods enabled to avoid of cumborsomism while adapting the dynamism at massive scale at some extend. However, persisting and ensuring the trust for varying contexts with an E2E trust mechanism require dynamic holistic views to adapt the dynamism at massive scale with extended data locality to the edges in trusted scalable manner. Initial observations for data exchange over a hybrid-cloud node, instead of cell unit scenario in 5G environment with the trust mechanism is promising to meet zero latency requirement of MEC (Multi-access/Mobile Edge Computing) edge units thanks to the improvements provided via memory-centric system design paradigms. It shows that data can be transmitted over a hybrid-cloud node rather than cell units can maximize total system throughput of emerging hybrid-clouds, which have 5/6G connectivity and strong quantum back-end units with the E2E trusted execution environment (TEE) and dynamic holistic views. By that means, it is promising to utilize MEMCA hybrid-cloud as massive scale cyber-intelligence system within the national security legal constraints with the E2E TEE, which have maximized total system throughput via dynamic holistic views of the observed chaotic context. So that, we can say that efficient utilization of MEMCA hybrid-cloud to national security systems as digital dynamics core mechanism can port the massive chaos in socio-dynamics to massive-growth via the dynamic feedback controller structures and embedded check-points to the available physical locations within the (near) real-time cyber intelligence mechanisms with maximized total system throughput values.

- <https://www.american-cse.org/static/NEW-2022-CSCE-BOOKLET-FINAL.pdf>
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- <https://www.american-cse.org/static/CSCE22-book-abstracts-printing.pdf>
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