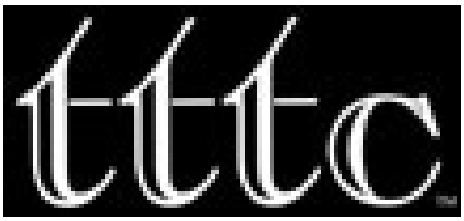

28th IEEE Asian Test Symposium (ATS)

11th – 13th Dec, 2019 (http://ats2019.iiests.ac.in)
Theme: Testing in the Era of AI and Autonomous system

Conference Highlights

ATS 2019 came to India (Kolkata) after 5 years, and was attended by 120+ members, across academia and industry.

- Keynotes had visionary speakers like Ken Butler (TI), Yervant Zorian (Synopsys), Rolf Drechsler (University of Bremen, Germany) Kaushik Roy (Purdue University), Ramesh Karri (New York University), Vivek Chickermane (Cadence) and Subhasish Mitra (Stanford). They covered topics around AI, Reliability, Security, Brain Computing, and more.
- Technical sessions had paper presentations in the area of AI Methods, ATPG/BIST, Testing AI Chips, SW test and BIST, Security, Validation & Diagnosis, Verification, Analog Test.
- Conference also had PhD contest for Academia as well as Industry presentations from Intel, Qualcomm, Texas Instruments, AMD, Mentor and Synopsys.
- Owing to the global participation across the world, ATS organized a cultural program "*A Tryst with Colors of India*" as well as "*An Evening on Kolkata Ganges*".

TTTC Participation

TTTC sponsored Fellowship for Academia participants, with free registration, stay and transport. Many volunteers from TTTC (Navin Bishnoi, Nagesh Tamarapalli, Subhadip Kundu) participated in ATS, for below sessions:

1. Plenary session presentation: Talk on VLSI Test growth, and connecting it to the initiatives to grow DFT/Test in India Semiconductor eco-system. These intiatives are driven by Test Technical Technology Council (TTTC India), which has 3 goals – (i) build the DFT/Test skills across the country (by enabling Faculty and Students with basic/advanced topics), (ii) create a pipeline of papers/posters to contribute to events like ITC/ATS, and (iii) participate in DFT/Test research to contribute to roadmap (for new methods and standards).
2. Panel Discussion:
    a. Title: "*Bringing Intelligence (Artificial) to Test"*
    b. Abstract: Artificial Intelligence (AI) is becoming an integral part of our semiconductor industry. AI learns based on data and through many functions. Would test be able to utilize AI, without creating a challenge to objective of Test. There are areas like yield analysis, ATPG patterns, test data to evaluate defects. The panelists discussed the possibilities as well as issues in this emerging and inter-disciplinary field.
    c. Panelist: Srivaths Ravi (TI), Subhadip Kundu (QCOM), Kanad Basu (UT Dallas), Thryambak Chandilya (SNPS). Moderated by Navin Bishnoi (Marvell)
    d. Structure: Each panelist presented on possible use-case of AI in Test, highlighting opportunities and challenges to close with their stand whether "Test is a case of AI solution, looking for an VLSI application" or "AI fits as a natural evolution, in EDA algorithms for Test development, owing to data volume, cost and complexity".
    e. Summary:
        i. While there is a huge buzz around AI now, however it exists for 4 decades, and is in use across VLSI design algorithms
        ii. Academia and Early learning focuses on Basic and Advance topics on Test (including Design, Reliability as well) that including a ML/AI course would be overwhelming

iii. There is a need to have a standard library of ML algorithms, which could be used in VLSI design flows (including test)
iv. Conclusion of the discussion tilted towards “Test being a case of AI solution, looking for a VLSI application”, by both panelists and audience.

3. Awards
    a. ATS organizing committee decided to felicitate two senior researchers from Academic and two senior people from Industry working in the domain of test and related area. Criteria included Longevity, Contributions to test technology topics, Impact (Publications, PhD students, Mentoring of colleagues, Patents, Products, EDA algorithms), Awards received over the years, Service to the test community and professionals societies
    b. ATS invited TTTC to send nomination and shortlisting Industry leaders. ATS 2019 felicitated the awards to Dr Rubin Parekhji (TI) and Dr Nagesh Tamarapalli (AMD).

4. Photos

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