

We hereby propose stream reasoning - an unexplored, yet high impact, research area - as the new multi-disciplinary approach which will provide the abstractions, foundations, methods, and tools required to integrate data streams and reasoning systems, thus giving answer to the above and innumerable other questions. The idea is simple, yet pervasive. Starting from lesson learned in the database community (e.g., the ability to efficiently abstract and aggregate information out of multiple, high-throughput streams) a new foundational theory of stream reasoning is needed, capable to associate reasoning tasks to time windows describing data validity and to therefore to produce time-varying inferences. From these foundations, new paradigms for knowledge representation and query languages design must be derived, and the consequent computational frameworks for stream reasoning oriented software architectures and their instrumentation must be deployed.