1. Name(s) of the author(s): **Manos Athanassoulis, Kenneth S Bøgh, Stratos Idreos**
2. Title of article: **Optimal Column Layout for Hybrid Workloads**
3. Title of journal, volume number, date, month and page numbers: **Proceedings of the VLDB Endowment Vol. 12, No. 13**
4. Statement of the problem or issue discussed: **Columnar storage is widely used in modern data analytics systems because of its advantages in assessing read-intensive analytic workloads. One of the most difficult aspects of designing systems for HTAP workloads is that data layout choices made for read-intensive scenarios rarely work well for write-intensive scenarios, and vice versa. However, current data systems come with a fixed design for many core data layout decisions, which can result in significant performance gains.**
5. The author’s purpose, approach or method: **Their hypothesis is that there are certain design decisions for which we should not make a predetermined decision. Instead, we can learn how to tune them to support HTAP workloads effectively with a single copy of the data. There is a set of decisions that always makes sense in modern analytical systems. Their method navigates the physical layout's possible design space by determining the number of partitions, their respective sizes and ranges, and the amount of buffer space and how it is assigned for each column.**
6. Primary (evaluation) result: **To test their findings, they created Casper, an in-memory storage engine that outperforms state-of-the-art data layouts in analytical systems for hybrid workloads. Casper boosts update-intensive workloads' throughput by up to 2.32 times and hybrid workloads by up to 2.14 times. They also demonstrate how to make data layout decisions that are resistant to workload variation by carefully choosing the optimization's input. They frame these column layout issues as an optimization problem in which, given workload expertise and performance requirements, they find the best physical layout for the workload at hand while remaining resilient to limited workload changes.**