

## **Traffic Management: A Holistic Approach to Memory Placement on NUMA Systems**

### **Summary and Strengths:**

The objective of this paper is to present a novel memory placement algorithm fit for NUMA(Non-uniform memory access)-based systems. The name of this algorithm is Carrefour. Besides optimizing locality, this algorithm addresses the issue of memory controller congestion and interconnect congestion due to memory traffic from data-intensive processes. The paper clearly points out that cost of remote wire delays is no longer the main bottleneck on modern systems, as demonstrated in experiments. Instead, it pinpoints that traffic congestion takes significant portion in wire delays. To address this issue, Carrefour was implemented and used in Linux, and experiments show that performance was increased compared to that of original memory placement scheme in default kernel and NUMA-aware patchsets disclosed for Linux.