Life After the Stonebraker* Stores

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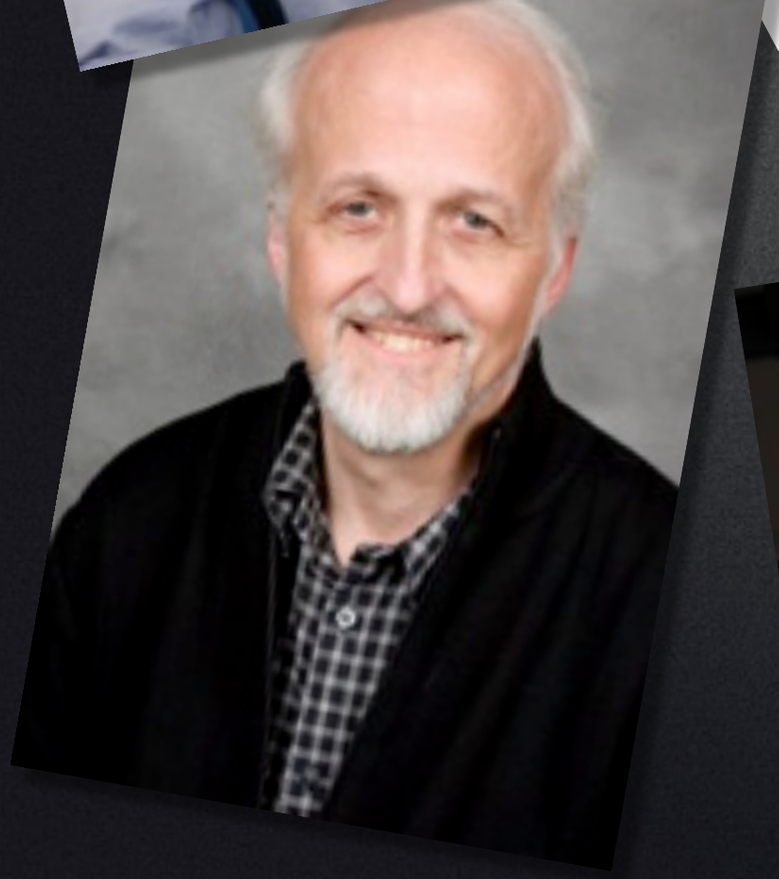
HPTS 2011 // October 24th, 2011



H-Store

http://hstore.cs.brown.edu

VoltDB

C-Store

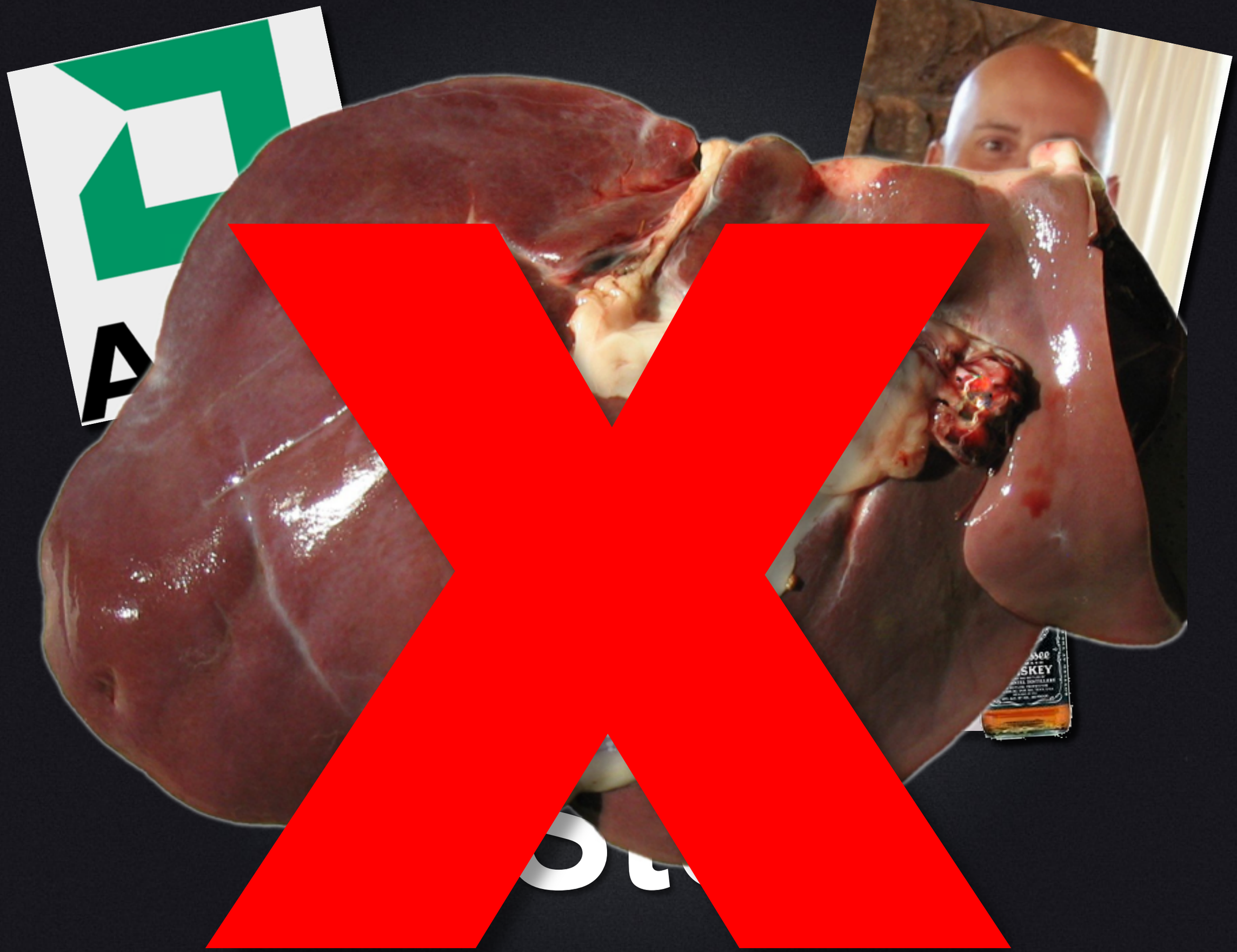
http://db.csail.mit.edu/projects/cstore

VERTICA


CAVIAR PETROSSIAN PARIS
CAVIAR PETROSSIAN PARIS

AMD Chips Overclocked to 8.43Ghz

The Register // http://bit.ly/qHogDf // September 13th, 2011


A
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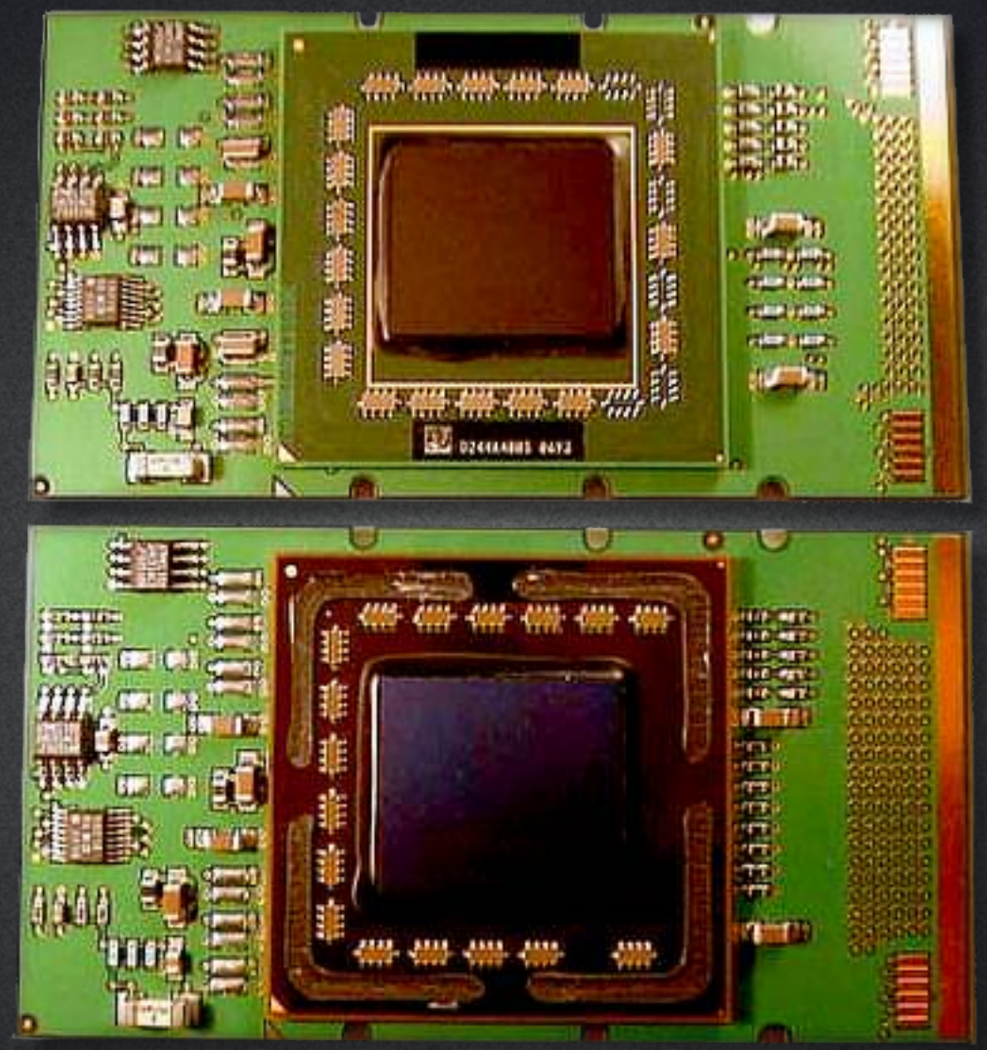
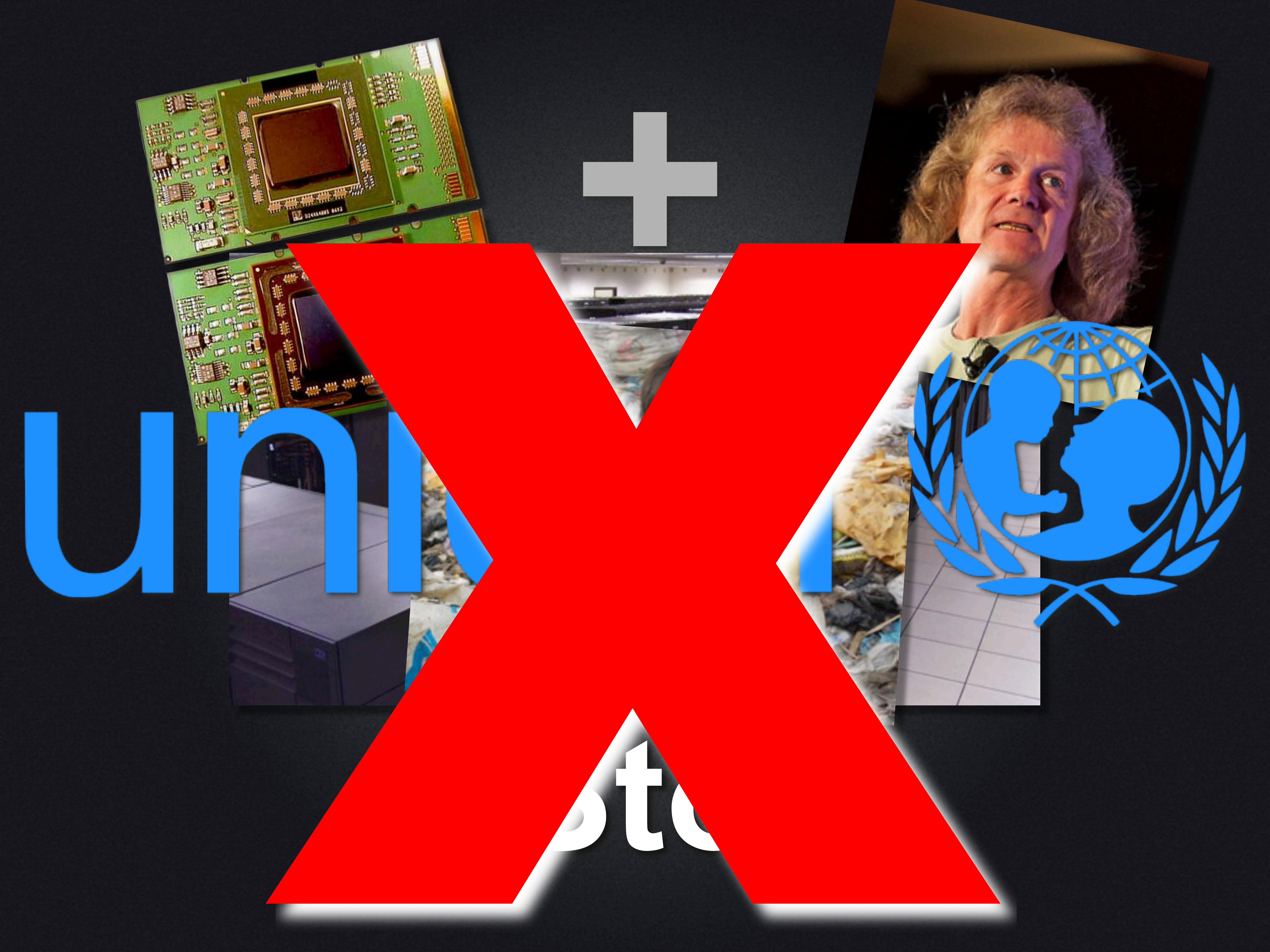


L3 Speed > DRAM Speed



?!

Memristors

Non-volatile solid storage

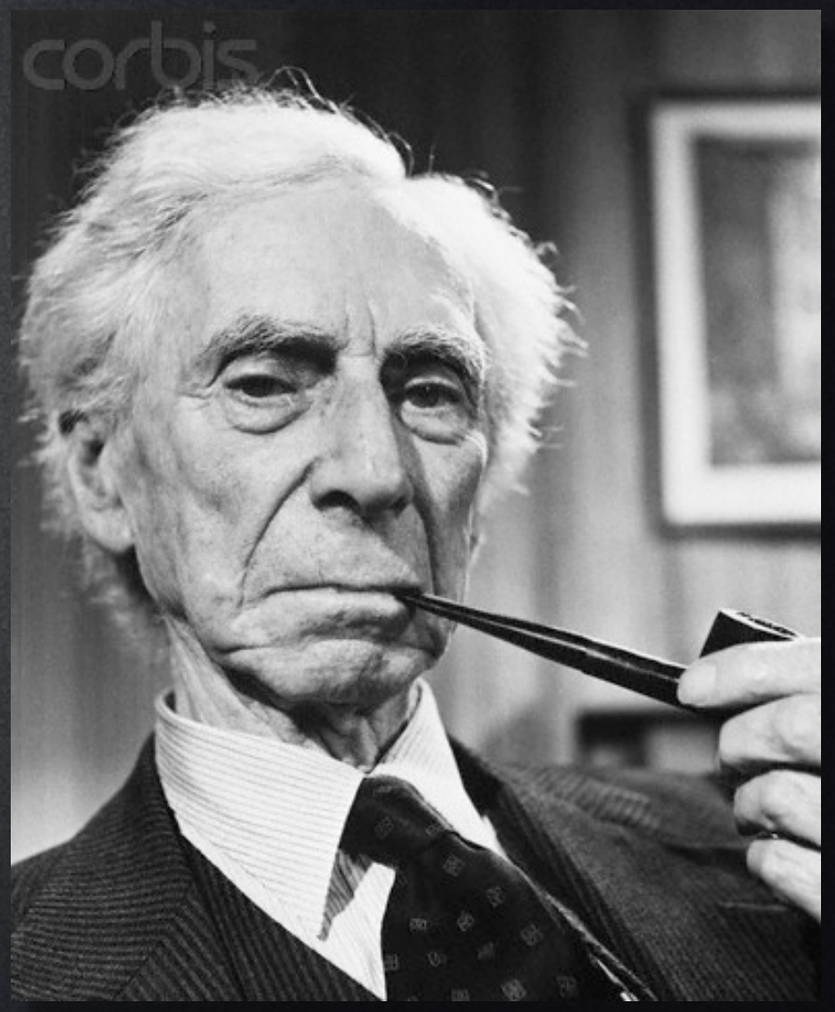
1971 Proposed at Berkeley.
2008 Discovered at HP Labs.
2013 Coming to market.

Stacked multi-PB per 1 cm^2

Memristors

Dynamically switch into storage vs. compute areas.

Execute stored procedures directly on gates using Material Implication Logic



Bertrand Russell

Client App

Txn Request

Stored Procedure

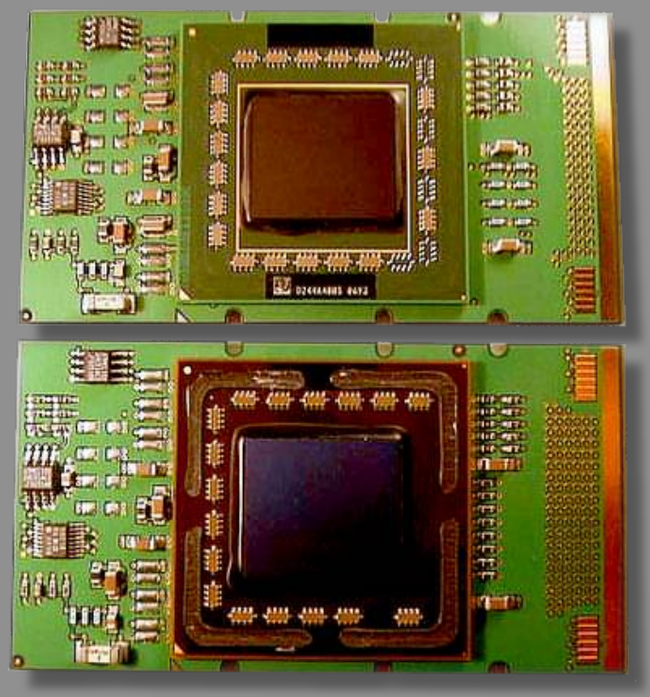
demux

COMPUTE

STORAGE

demux

Controller

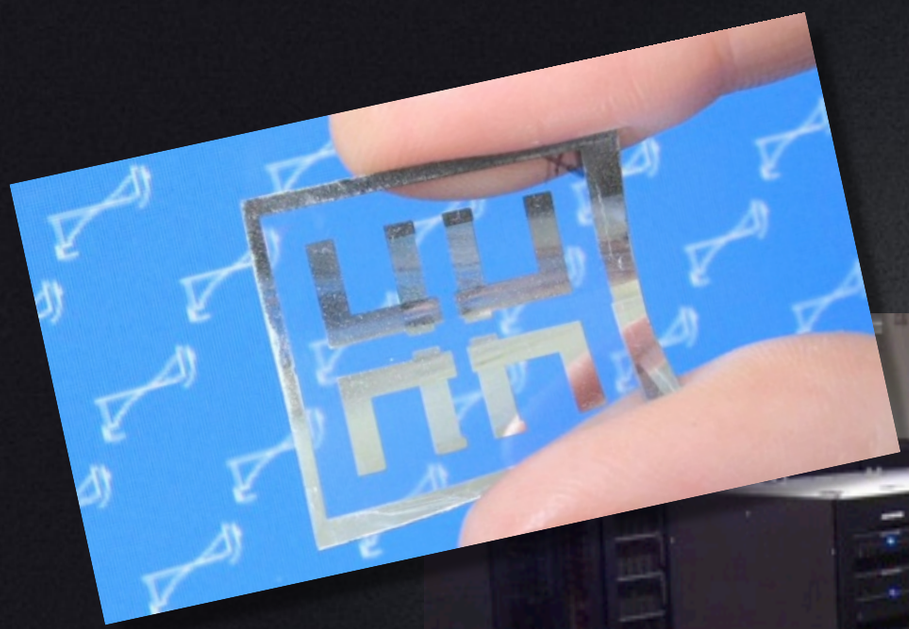
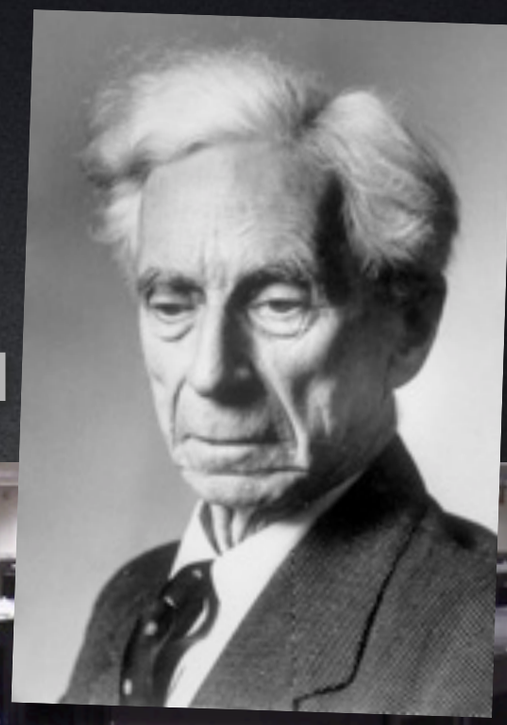


Why this matters.

Single-node elasticity.

Multi-partition locality.

Self-optimizing
stored procedures.

M-Store