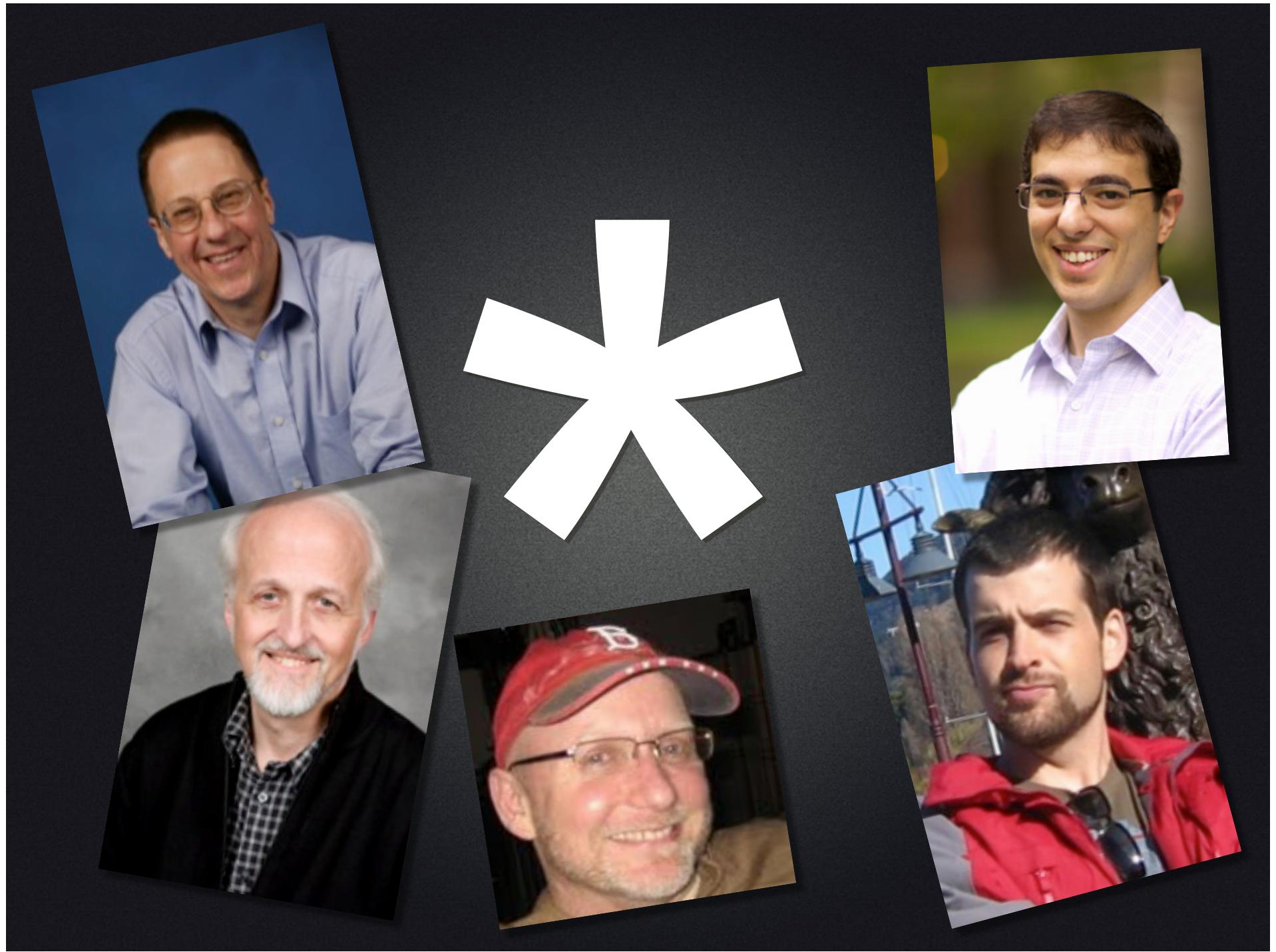


Life After the Stonebreaker* Stores

Andy Pavlo // Brown University // @andy_pavlo

HPTS 2011 // October 24th, 2011



H-Store

<http://hstore.cs.brown.edu>



VoltDB

C-Store

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







AMD Chips Overclocked to 8.43Ghz

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



W-Store

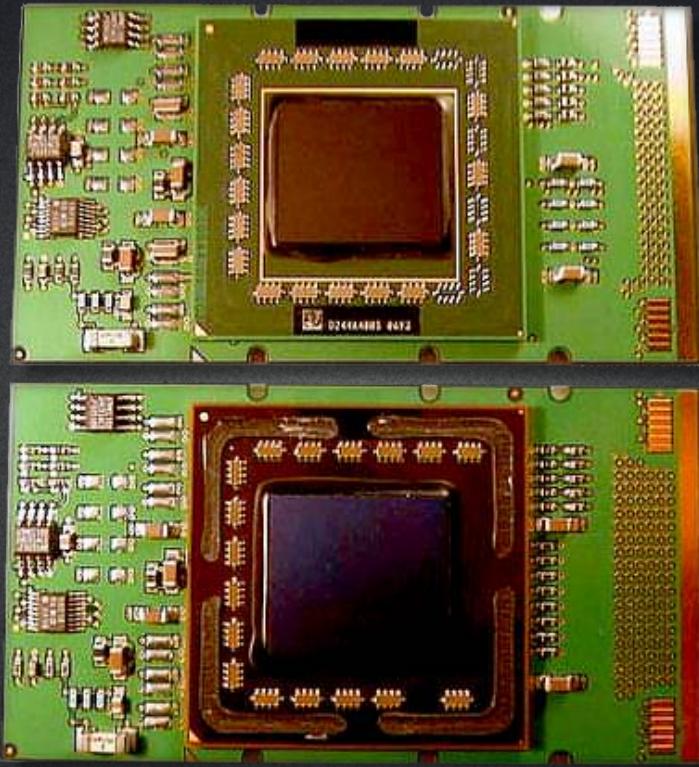


W-Store

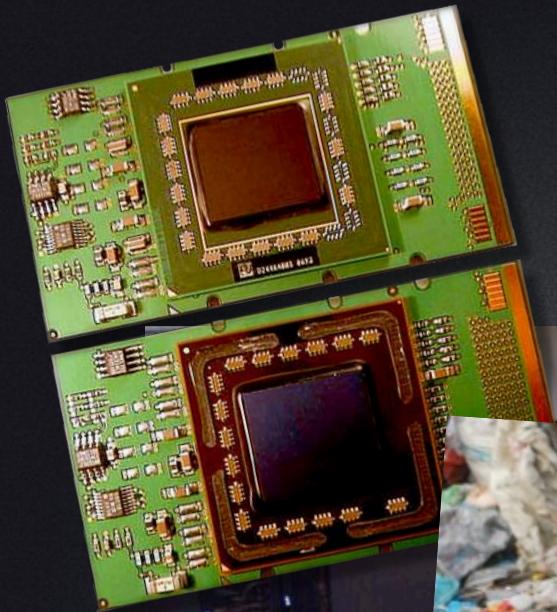
A
W

W-Store



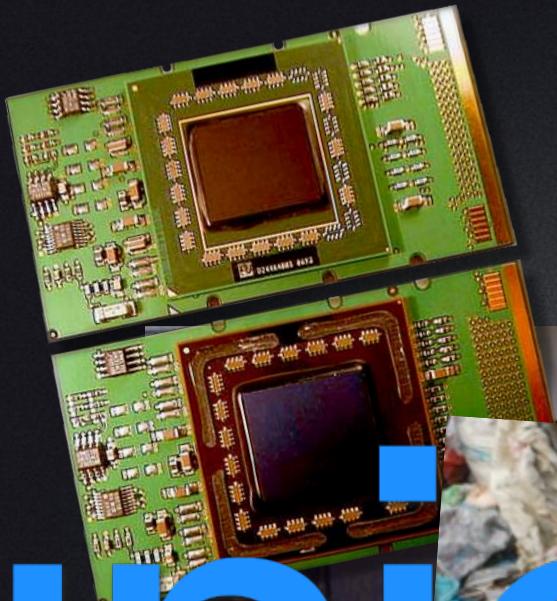


L3 Speed > DRAM Speed



L-Store

unicef



L-Store

uniX

L-Store





Memristors

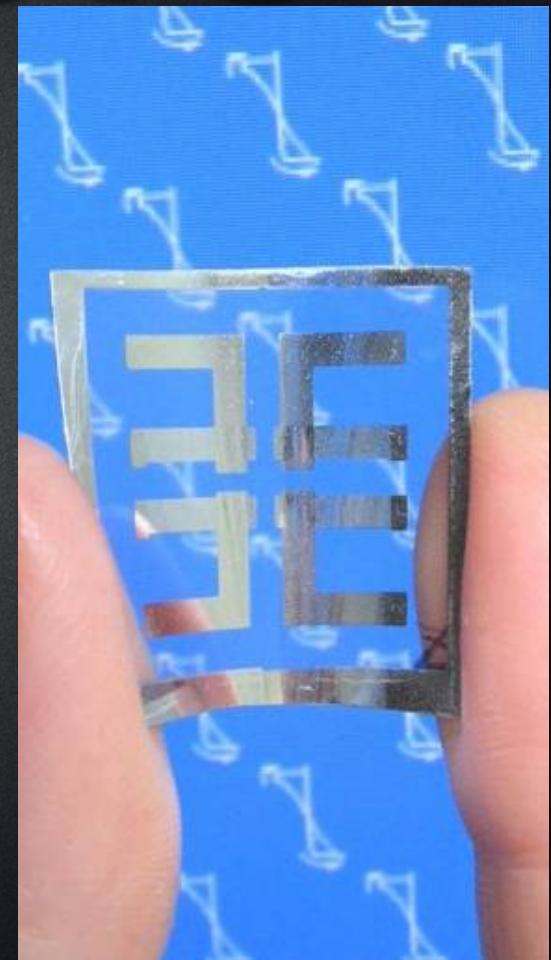
Non-volatile solid storage

1971 Proposed at Berkeley.

2008 Discovered at HP Labs.

2013 Coming to market.

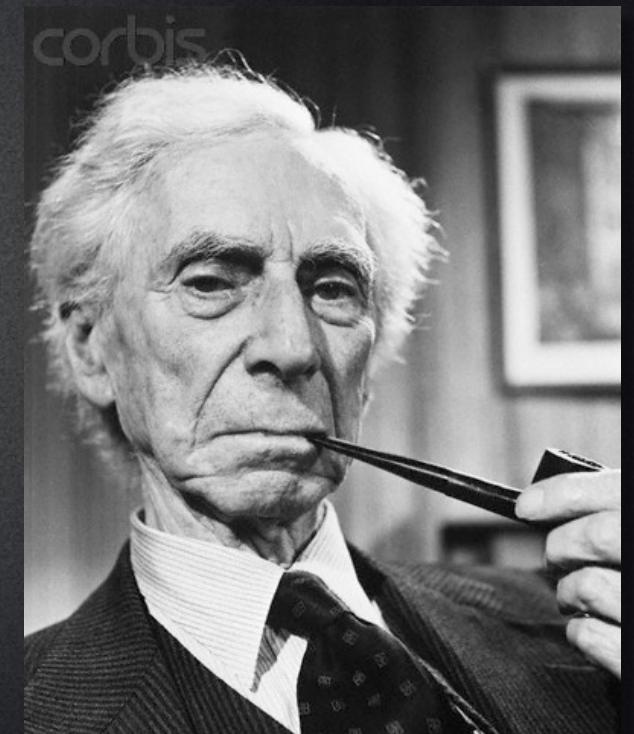
Stacked multi-PB per 1 cm²



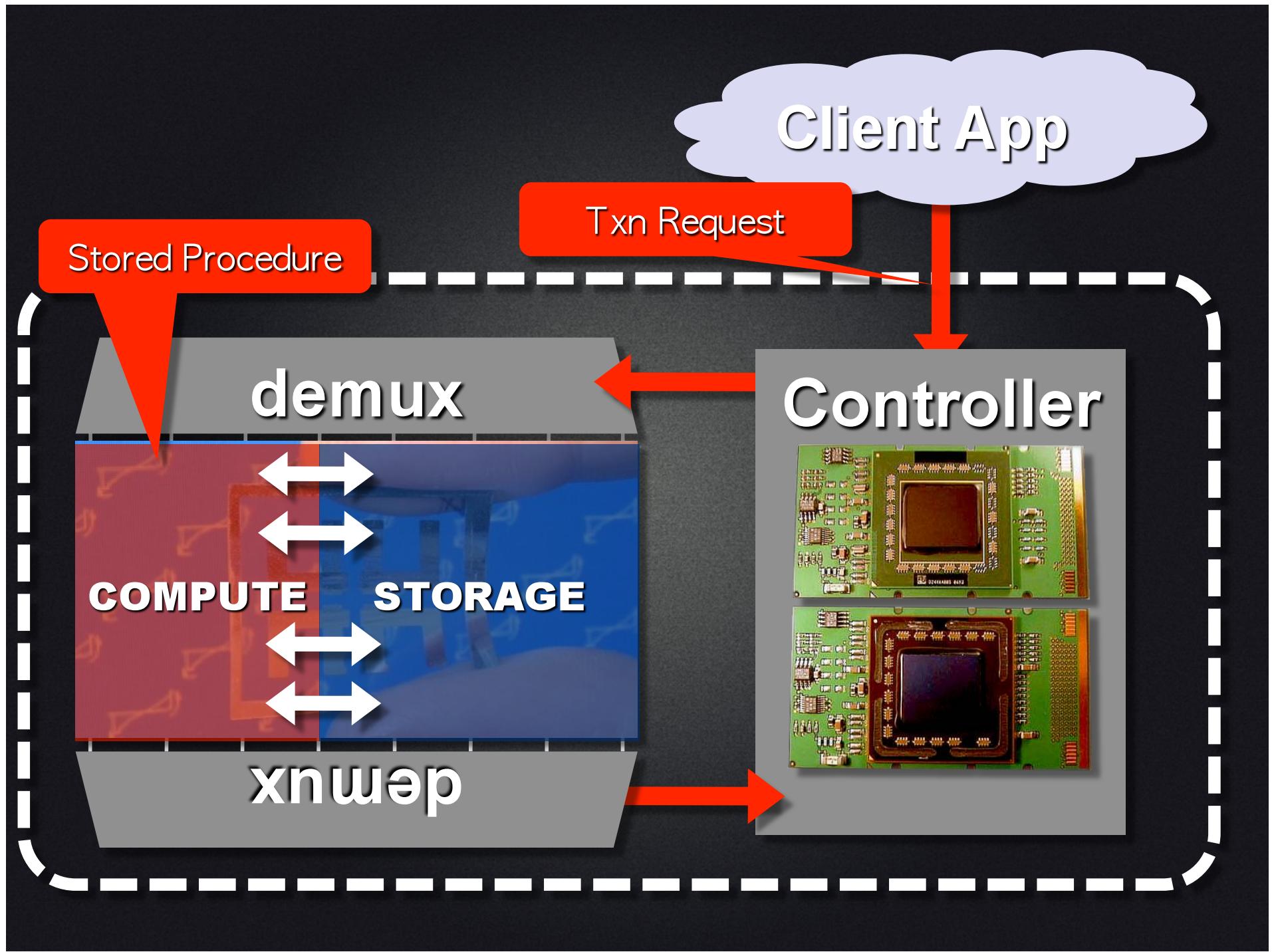
Memristors

Dynamically switch into storage vs. compute areas.

Execute stored procedures directly on gates using
Material Implication Logic



Bertrand Russell

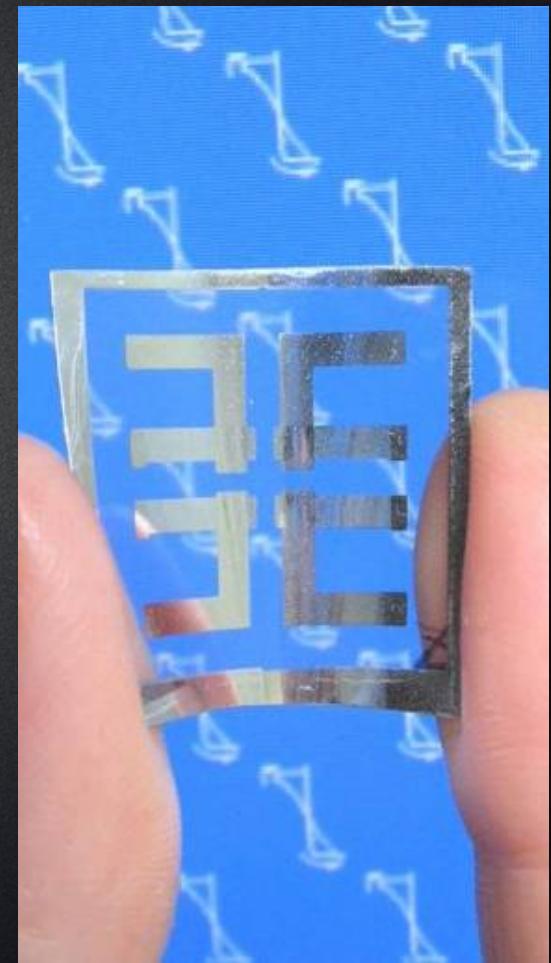


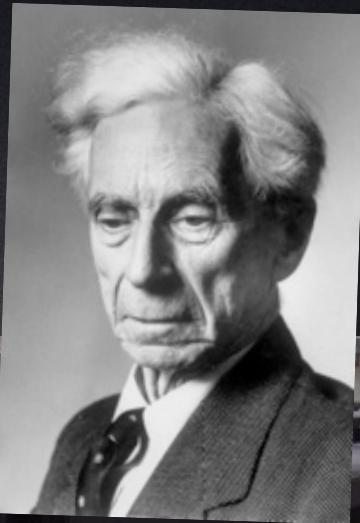
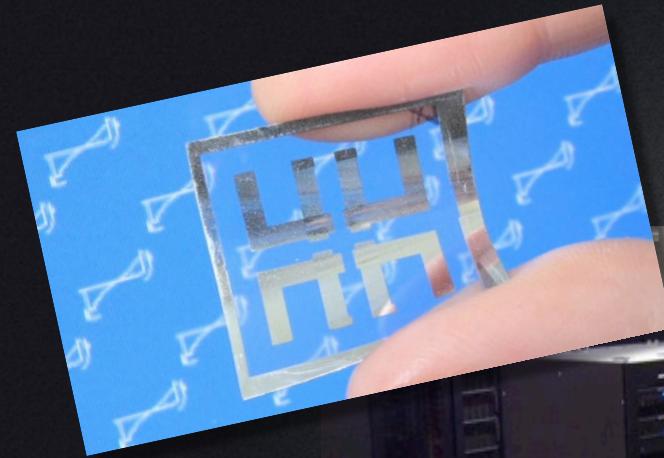
Why this matters.

Single-node elasticity.

Multi-partition locality.

Self-optimizing
stored procedures.





M-Store