Prefetcher Contest Results

Methodology

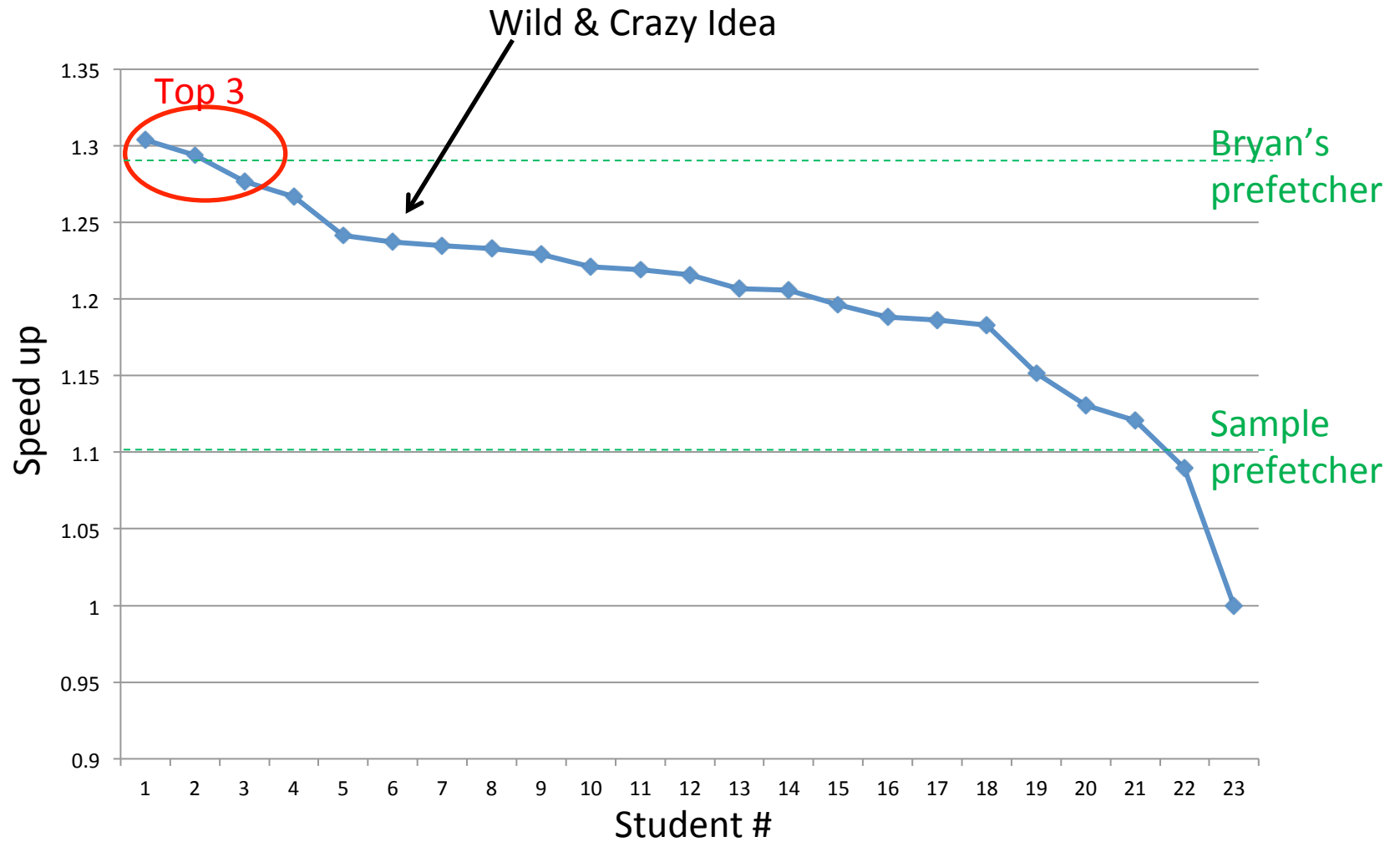- Traces

Benchmark	Length	Note
cpp	6.8M	C preprocessor
diff	31.9M	Compare files line by line
grep	12.1M	Print lines matching pattern
g++	42.8M	GNU C/C++ compiler
gzip	48.8M	Compress/expand files
ls	49.5M	List directory contents
m4	36.7M	Macro processor
mcf	49.8M	Combinatorial optimization
md5sum	20.6M	Compute and check MD5 (hash)
plamap	12.6M	PLD mapper
python	47.7M	Programming language
sort	37.8M	Sort lines of text
tar	22.0M	GNU archiver
testgen	4.7M	Test case generator

- Machine: cseapel07.ucsd.edu

Grading guideline

- (4pts) Description of your design/algorithm
- (3pts) State accounting and HW correlation
- (4pts) AMAT and evaluation/analysis
- (2pts) Performance
  - 2 pts if faster than sample prefetcher
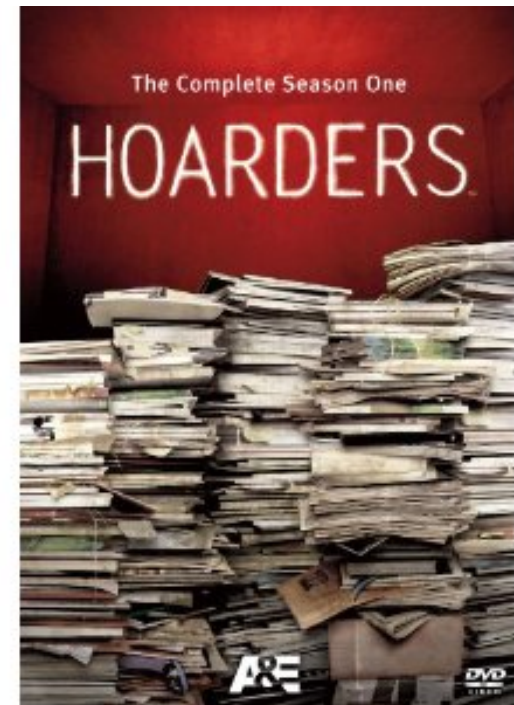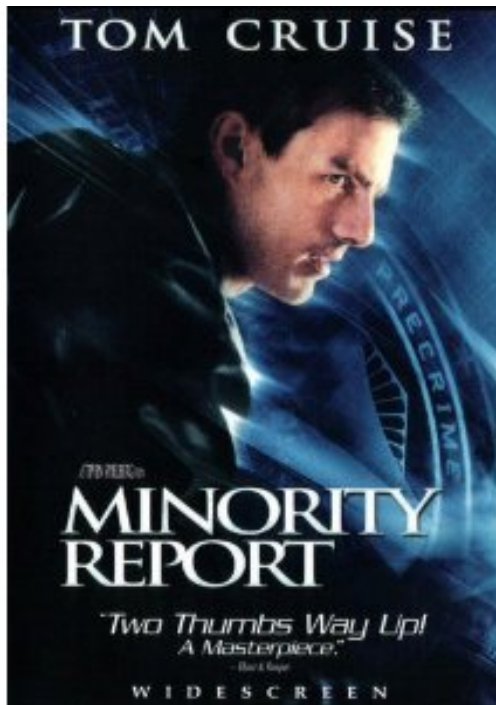 - 1 pts if faster than no prefetcher

Results

… and drumroll!

Special award for creativity

- Liuyi Eric Zhang
- Lottery prefetcher
  - Computes prefetch address based on odds of a memory access offset
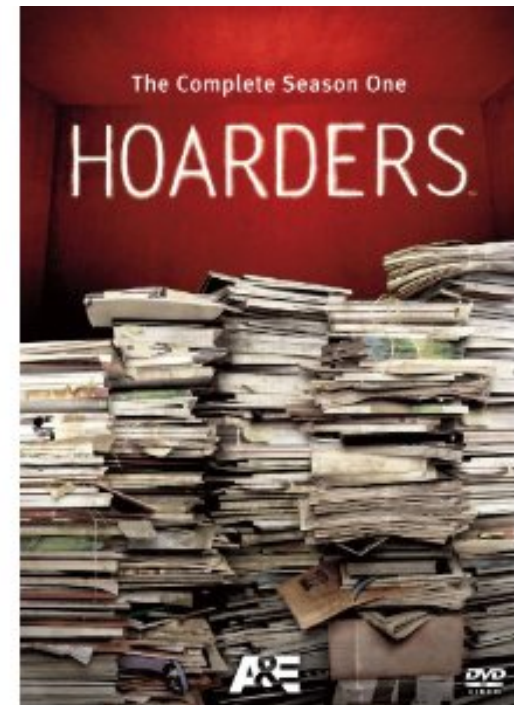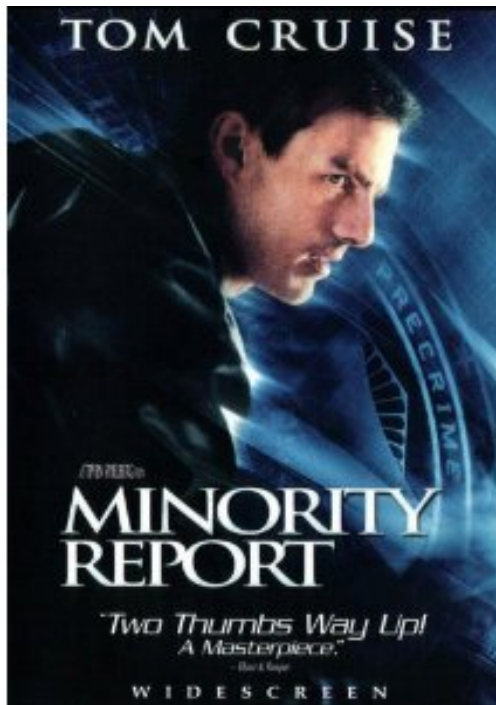
Prizes

On DVD

Fastest prefetchers

- 3rd place (honorable mention)
  - Dongcai Shen with speed up of 27.6%
  - Forward & backward stride prefetch
- 2nd place
  - Quishi Wang with speed up of 29.4%
  - Reference prediction table based prefetch
- 1st place
  - Ying Zheng with speed up of 30.4%
  - Delta Correlating Prefetch Table + Sequential prefetch

Prizes

On DVD