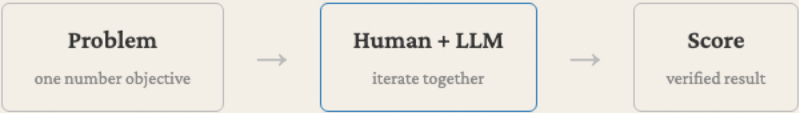


Learnings from Optimization Arena

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April 9, 2026

Optimization Arena



1,000+

players:

20k

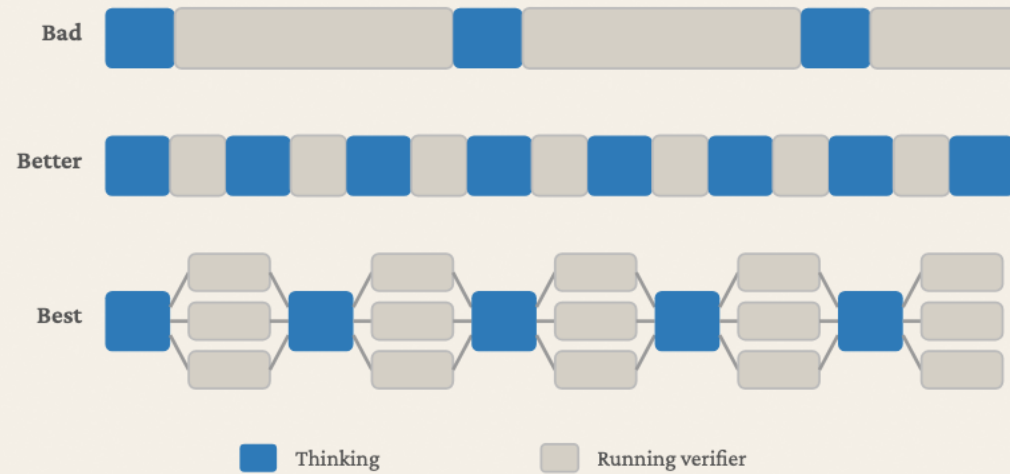
submissions

8

challenge

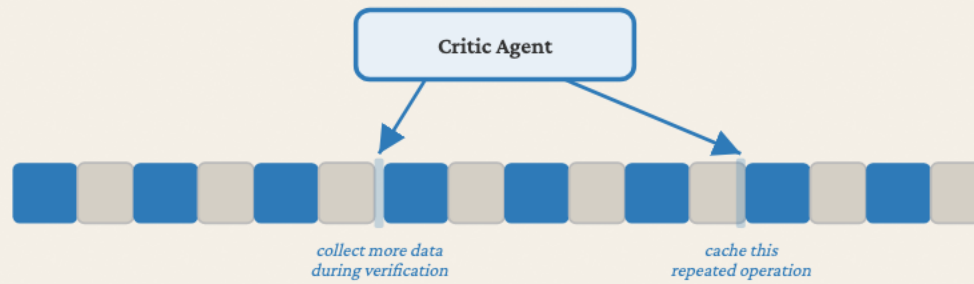
Generalists with large token budgets consistently outcompete domain experts

Make Thinking the Bottleneck



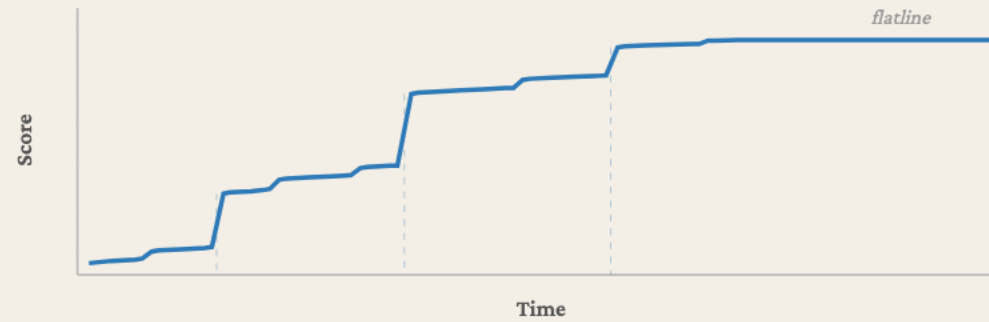
Everything surrounding the thinking step should be fast and parallelizable

Improve How You Improve



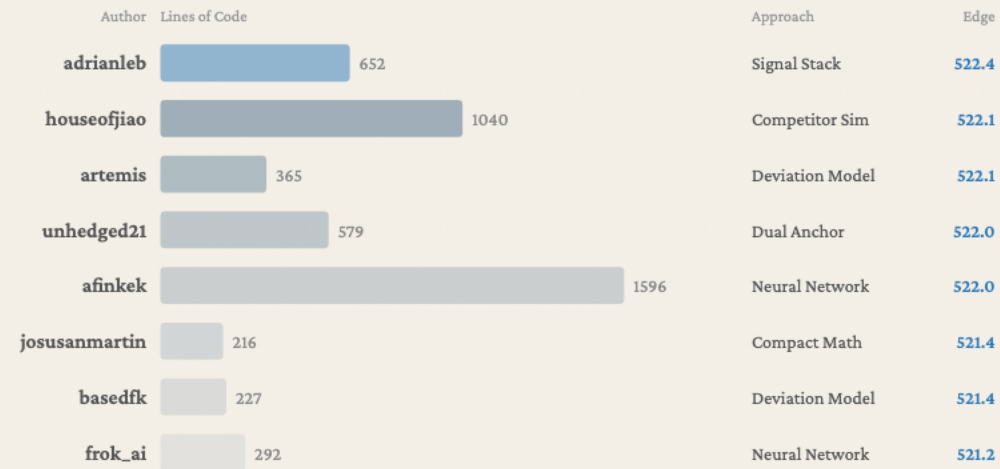
A critic agent watches from a distance and periodically improves the process

Optimize for Breakthroughs



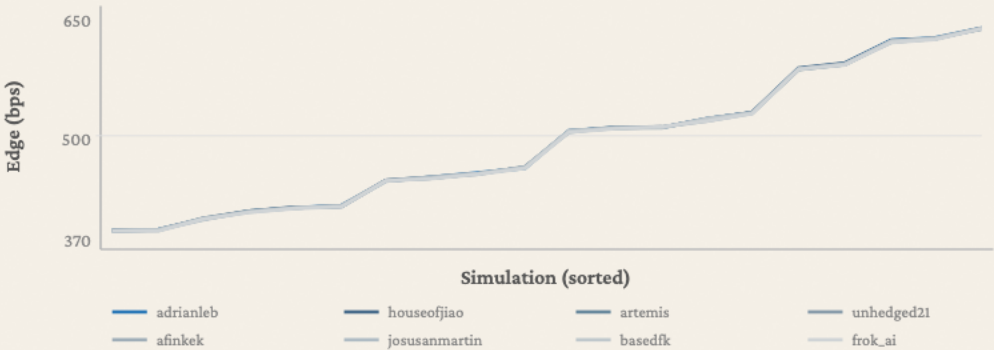
Introduce entropy to avoid flatlining: multiple agents, literature review, web search

Wildly Different Strategies



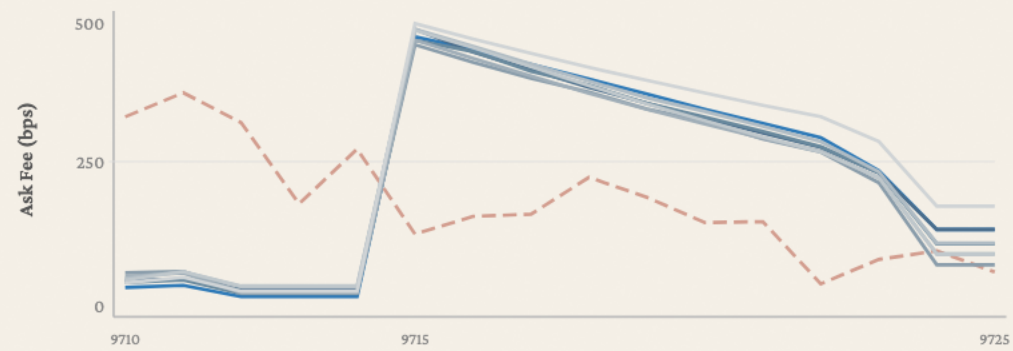
Lines of code range from 216 to 1,596 across neural nets, math models, signal stacks, and a competitor simulator

All Roads Lead to Rome



8 wildly different strategies produce nearly identical results across 20 simulations

Top Strategies Move in Lockstep



All 8 strategies widen the same amount

Extracting Elegant Ideas

```
uint256 toxEma = wmul(DECAY, toxEma) + wmul(1e18
uint256 dev = wdiv(absDiff(slot, pHat) * DEV_NUM
slots[7] = slots[7] > WAD ? spots[7] - IDLE_DECA
uint256 sigmaHat = _powWad(sigmaHat, SIGMA_DECAY
if (arbcCont > 3) fee = SURGE_BUMP * arbcCont
uint256 pHat = wmul(alpha, spot) + wmul(1e18 - a
0xf5a50014ffc3028ff97ff5ff5ff7ffbf9002e0041...
newAsk = baseFee + convex_k * dev * dev + volBon
uint256 normGap = absDiff(normX * normY, k_target
lambdaHat = wmul(LAMBDA_D, lambdaHat) + LAMBDA_U
uint256 signedErr = int256(slot) - int256(anchor)
fee = F0 + C_SPREAD*max(dev, C_RATE*rate + C_RISK*ra
uint256 stickyDev = val(dev, wmul(STICKY_D, prev
slots[12] = direction > 0 ? buyTox : slots[12];
w2 = _relu(matmul(w1, hidden_weights) + bias);
uint256 cheapFirst = isFirst ? DISCOUNT * 1;
```



Estimate fair price

EMA, dual anchor, or virtual reserves

Measure toxicity of flow

deviation, arb probability, or neural net

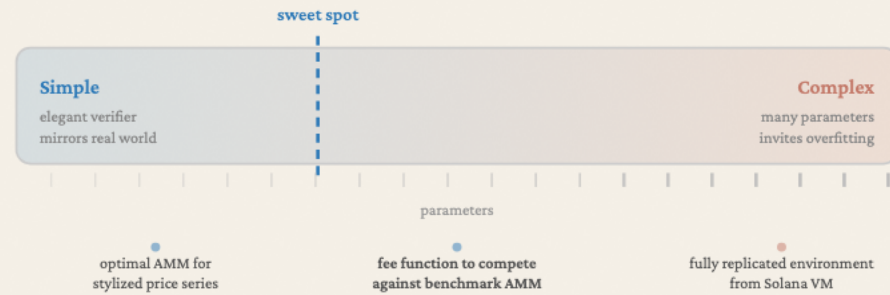
Set asymmetric fees

widen the side facing adverse flow

...what else is hiding in here?

The model solves the challenge. Can it introspect and teach us something about the world?

Harder to Build Than to Solve



Every additional parameter is a new vector for overfitting