

MOVE42 / INNOVATIONZERO

The next move is an algorithm.

Move 37 answered a Go position with one coordinate no human expected. Move42 asks the same question in a larger action space: when the board is a requirement, can the move be a complete executable algorithm?

POSITION → COORDINATE

becomes REQUIREMENT → ALGORITHM

A requirement is a board. The contract defines legal play. The referee decides what worked.

MOVE 37

Go position

→

Q16

one legal coordinate

MOVE42

Technical requirement

→

Executable algorithm

one independently runnable method

state → legal action → external consequence →
preserved experience

The proposed output changes from an answer or score to an independently runnable method. The learning target is the distribution of later executable proposals across requirements.

Search now. Learn for later. Or combine both.

A Search on the current requirement

AutoResearch improves through a proposal–execution–inspection–retry loop on the current requirement.

```
propose → execute → inspect → retry ∅
```

B Learn across prior requirements

Move42 aims to improve the proposal distribution across requirements, so the first executable move itself becomes learnable.

```
receipts → later proposal distribution →  
first executable move
```

Hybrids remain possible; the distinction is where search occurs and what persists between tasks.

The current record does not measure superiority over research agents, task-time speedup, or an admitted prospective strict first move.

Board. Move. Rules. Referee. Memory.

Board

01

The requirement plus every permitted input, state transition, and resource boundary.

Encode the requirement and permitted state before any proposal is made.

Move

02

One complete executable algorithm whose outputs can be independently reproduced.

Define the runnable artifact, interface, and terminal outputs that count as a move.

Rules

03

The legality contract that rejects shortcuts, leakage, hidden state, and invalid resources.

Close shortcut and leakage paths before play, then make every violation an explicit failure.

Referee

04

An external consequence-based evaluator that executes the move and records success or a named failure.

Build the referee outside model self-assessment and bind its identity to every outcome.

Memory

05

Canonical success and failure receipts that can supervise later proposals across requirements.

Preserve receipts, train later proposals, and separately freeze a true one-proposal prospective evaluation.

A finite, inspectable historical record.

1,649

ELIGIBLE HISTORICAL CASES

353

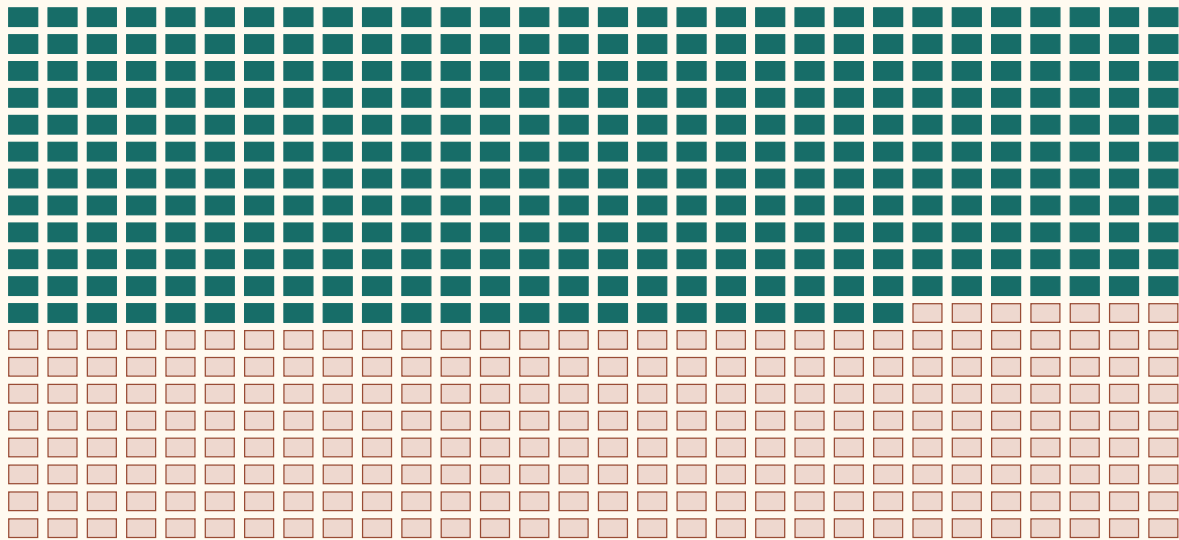
BEAT TABFM ENSEMBLE

228

BEAT ALL FOUR FOUNDATIONS

600

RECORDED ATLAS MOVES



353 wins • 247 losses • all rows retained

Source: formal atlas and aggregate-selection receipts. Historical, outcome-ranked, not a prospective win-rate study.

Algorithms respond to the board they receive.

RECORDED ALGORITHMIC MOVE Cpu Nested polynomial interactions and sigmoid transforms feed a ridge-GCV head; the receipt describes the executable structure without assigning a causal explanation. RECORDED RMSE FACTOR 5.13× SEARCH 17.578s FIT + PREDICT 0.480s COMPLETE WORKFLOW 19.527s	RECORDED ALGORITHMIC MOVE Greenhouse A Gaussian-process regressor combines radial-basis and periodic components for the two-feature table; the match is case-specific, not a climate claim. RECORDED RMSE FACTOR 3.40× SEARCH 15.955s FIT + PREDICT 1.224s COMPLETE WORKFLOW 19.614s	RECORDED ALGORITHMIC MOVE Spectrometer A compact ridge-GCV calibration algorithm is the recorded quality outlier; its longer complete workflow keeps it outside the fast focal pair. RECORDED RMSE FACTOR 4373.89× SEARCH 20.440s FIT + PREDICT 0.563s COMPLETE WORKFLOW 100.180s
---	---	--

Every outcome can teach the next proposal.



THE UPDATE PATH

Execution produces the learning signal.

Gradients update the proposing model after execution; each algorithm remains independently runnable, and frozen validation decides what persists.

Four possible games. All explicitly vision.

VISION • COMPILER GAME

A source algorithm, target semantics, architecture, and optimization contract.

Move. A complete transformation or optimization algorithm that produces executable output.

Referee. Correctness suites, resource limits, and consequence-based performance measurements.

A design horizon, not a finding of the current regression study.

VISION • CONTROL GAME

A control requirement, observable plant state, hard constraints, and permitted actuators.

Move. A complete control algorithm that can be executed against the declared interface.

Referee. Constraint violations, stability, resource use, and measured physical consequence.

A design horizon, not evidence of autonomous control performance.

VISION • EXPERIMENTAL GAME

An apparatus, measurement protocol, budget, safety envelope, and experimental objective.

Move. A complete executable experiment schedule and analysis method.

Referee. Predeclared measurements, explicit failure outcomes, and independently preserved receipts.

A design horizon, not an experimental result reported here.

VISION • SCIENTIFIC-DESIGN GAME

A scientific question, admissible evidence, interventions, and falsification criteria.

Move. A complete executable design for collecting and analyzing the next evidence.

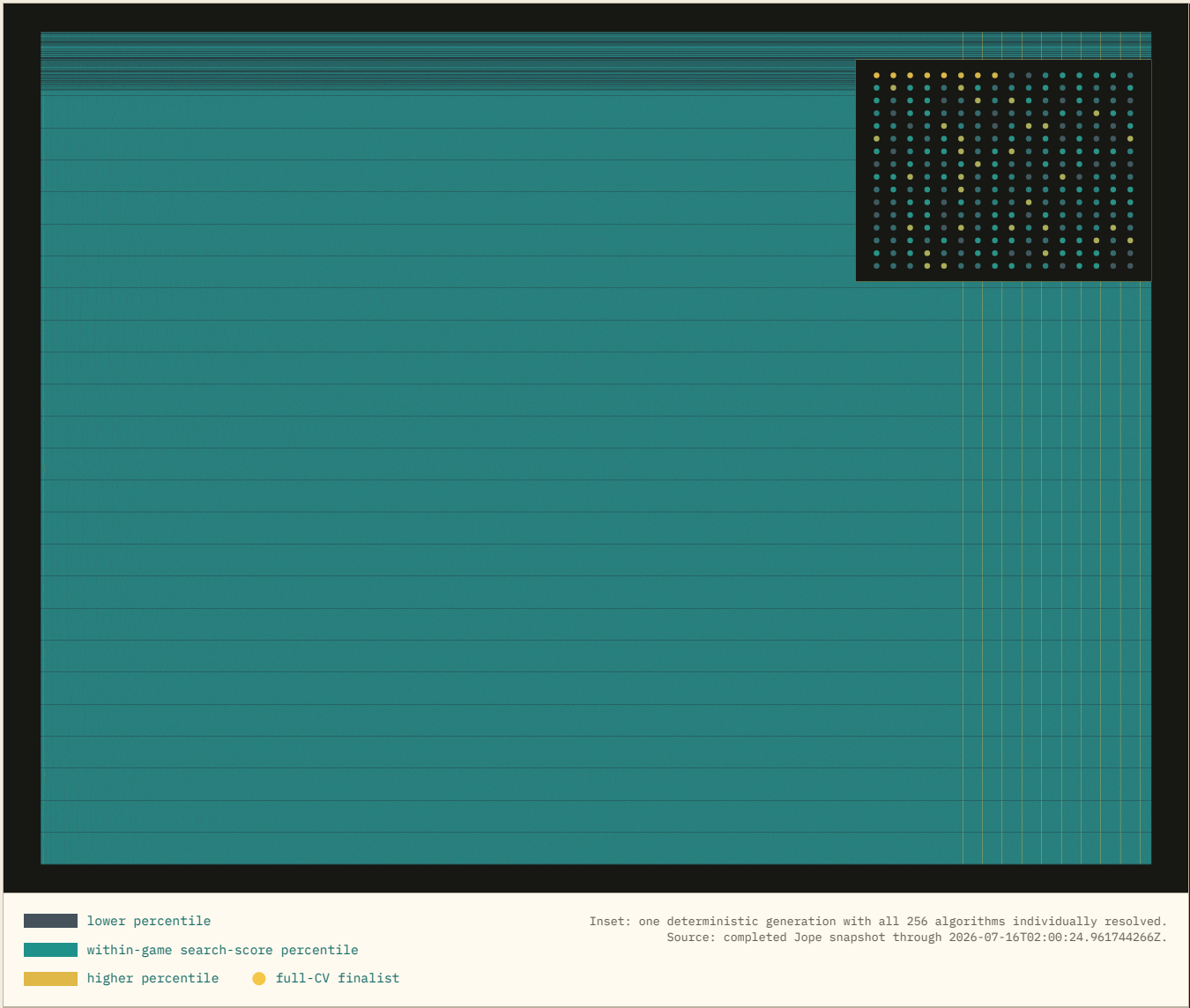
Referee. Preregistered consequence tests that can reject as well as support the proposed method.

A design horizon, not a claim of causal or scientific discovery.

317,156,096
generated
algorithms.

Every recorded
algorithm contributes
once to the
performance field.

2,854	2,017	1,238,891	28,540
SEARCH GAMES	DATASETS	GENERATION FILES	FULL-CV FINALISTS



Rows are search games; horizontal position is normalized search progress. Color uses recorded search-score percentile, gold marks are full-CV finalists, and repeated proposals count as separate search moves.

Bold thesis. Visible limits.

Established here

An inspectable historical existence signal: complete executable algorithms, external outcomes, preserved receipts, and the exact observed search-scale record.

Not established

Expected future win rate, focal-case causality, matched comparator speed, universal superiority, safe autonomous use, or prospective one-proposal performance.

ACTIVE PAPER

Move42: InnovationZero Learns to Invent Executable Algorithms

SHA-256 7a80bbfac4f20a9db7b94bd46111fa6262d72bc65dbcf33c3605a484f68dabce

The immutable v1 paper and evidence-v1 bytes remain unchanged. Legacy protocol scores are audit-only and live on the evidence route.