



HAVE YOU EVER MET AN ENGINEER WHO BUILT SYSTEMS IN ALL THESE WORLDS?

SIGNALS

VISION

SYSTEMS

PATTERNS

R&D

2D to 3D

Compilers

CREATIVITY

**And turned them into
working systems?**

VIKTOR CHEPRAKOV

Builder of Unusual Systems

Finding Structure in Complex Systems

THE REAL QUESTION

Can expertise survive outside its original field?

Different domains.

The same process:
understand structure,
build representation,
create a working system.



Computer vision.

Industrial imaging.

Medical signals.

2D to 3D.

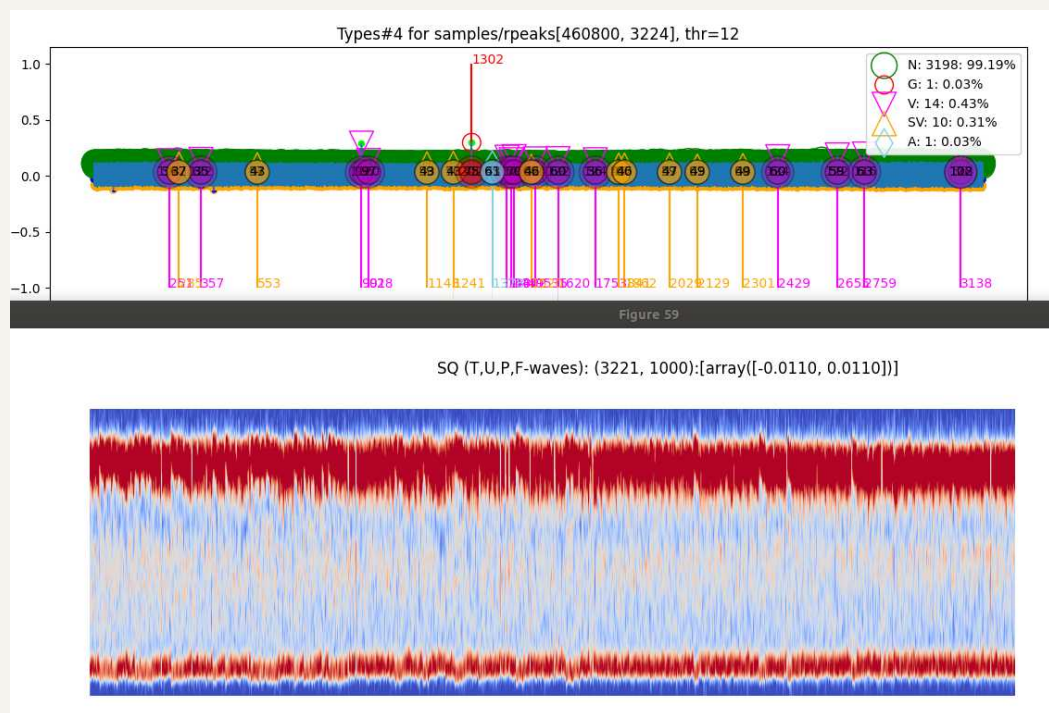
Creative systems.

Pattern discovery.

LISP compiler

Different industries. Same signal.

WHAT IF TRAINING DATA IS NOT ENOUGH?



HOLTER ECG ENGINE

6

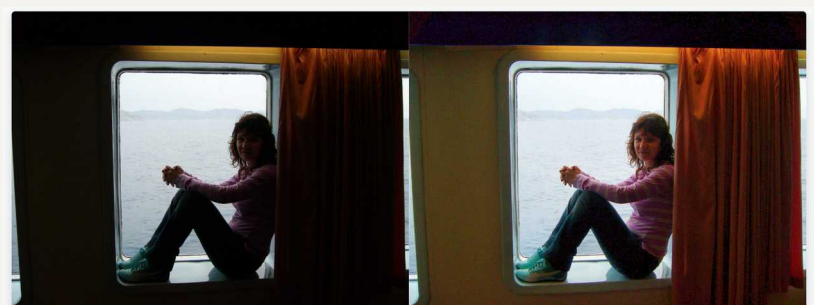
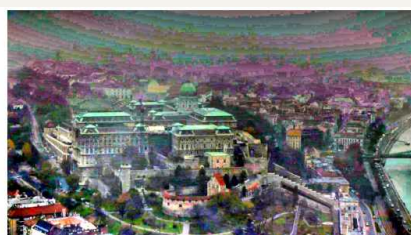
MONTHS
concept to
working code

Most modern ECG systems depend heavily on annotated datasets and statistical learning. This project started from a different assumption: the signal itself contains structure.

Implemented: morphology analysis, rhythm structure detection, event classification pipeline, physician-oriented review tools.

Understanding structure before scaling data.

CAN ONE IDEA WORK ACROSS MANY DOMAINS?



UNIVERSAL IMAGE ENHANCEMENT

Visible imagery, thermal imagery, medical scans, satellite observations and LiDAR data all carry different noise models. Most enhancement systems are built for one modality.

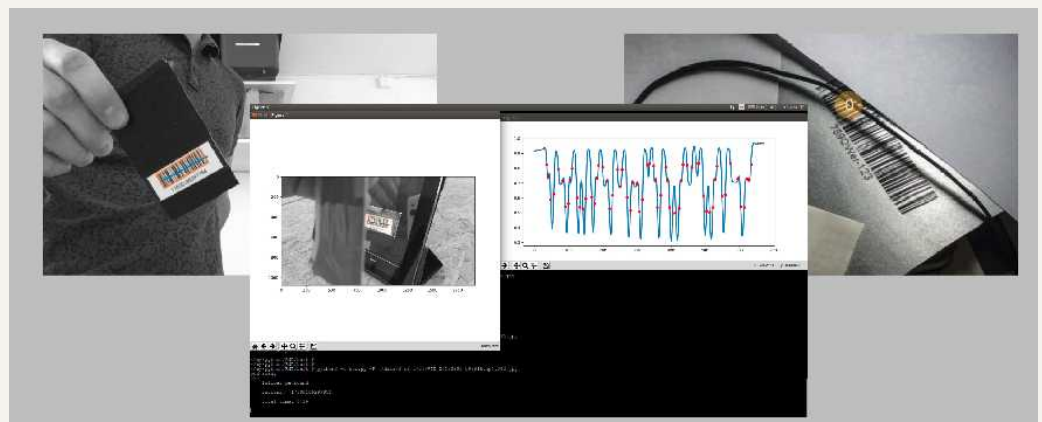
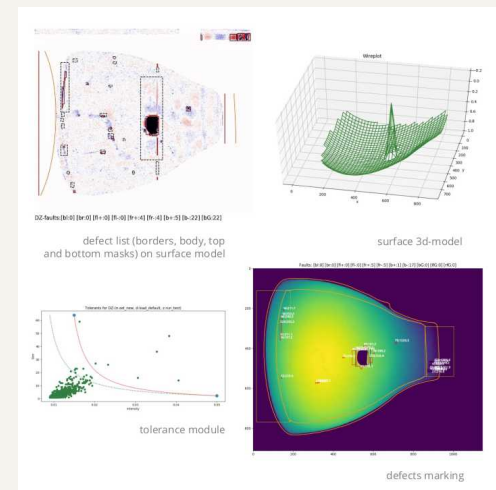
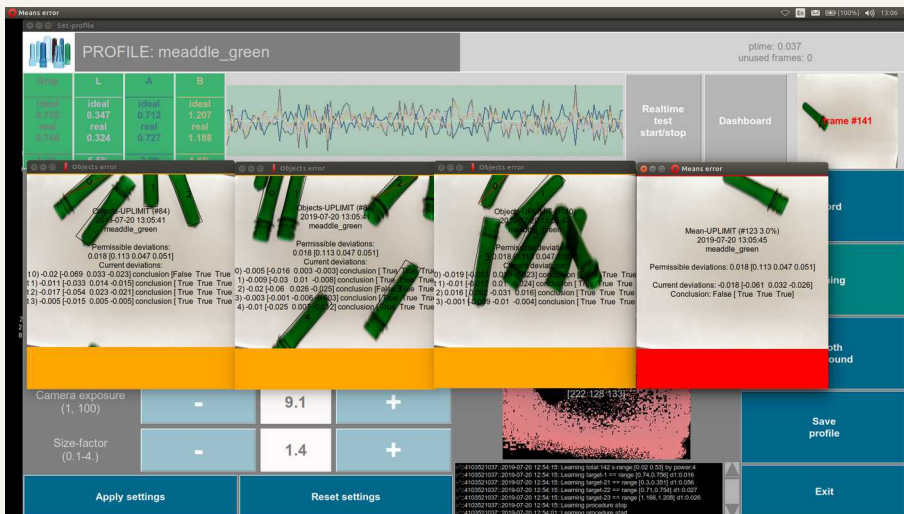
This project explored a stronger question: what if enhancement is a property of information, not a property of a sensor?

You can try: <https://youcanttryitnow.viic.net/>

VISIBLE • THERMAL • MEDICAL • SATELLITE • LIDAR

ONE REPRESENTATION. MANY DOMAINS.

WHAT HAPPENS WHEN REALITY REFUSES TO COOPERATE?



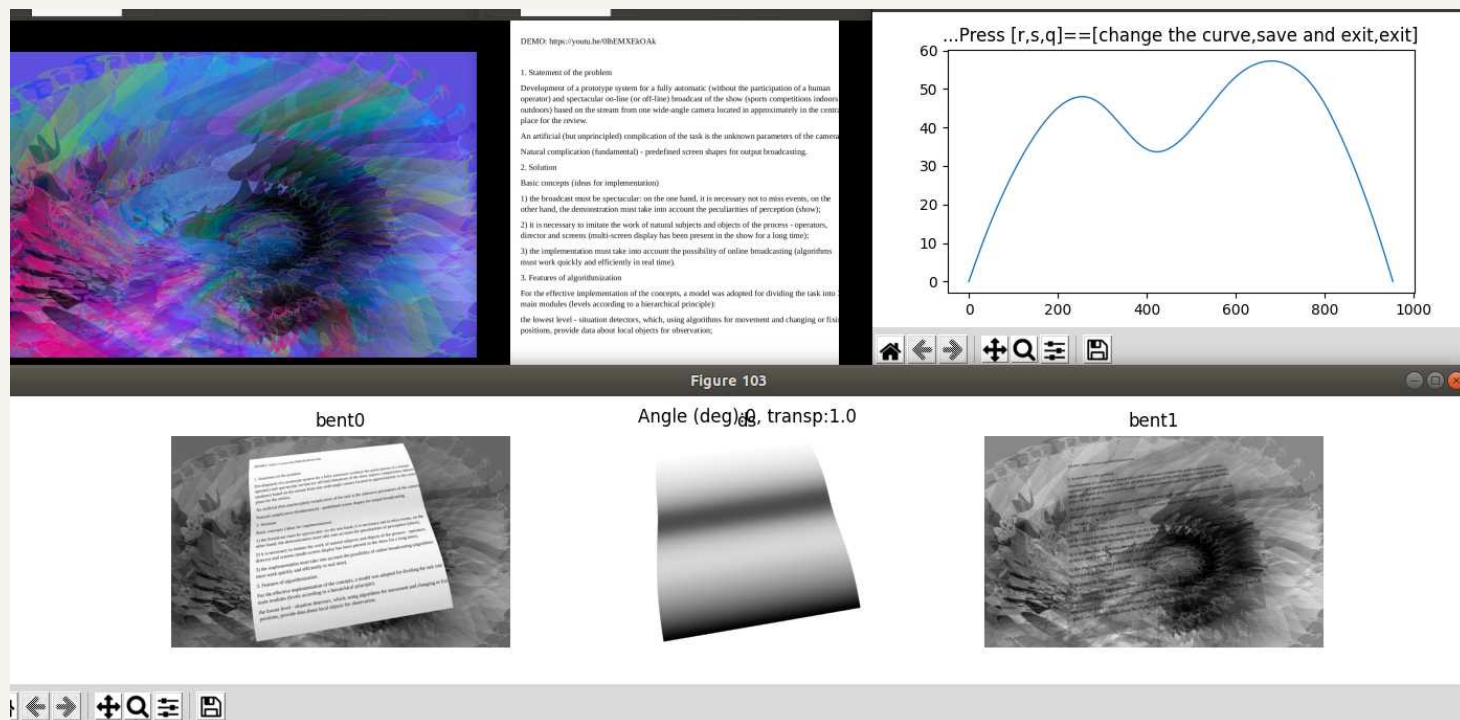
INDUSTRIAL MACHINE VISION

Laboratory conditions are easy. Industrial environments are not: low contrast, motion blur, lighting changes, occlusions, and noise.

Projects included barcode recognition, industrial inspection, and applied vision systems designed around operational constraints rather than ideal datasets.

Engineering begins where assumptions fail.

CAN RESEARCH SURVIVE CONTACT WITH REAL PRODUCTS?



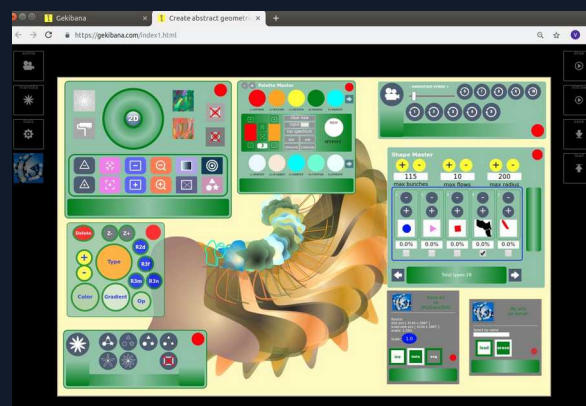
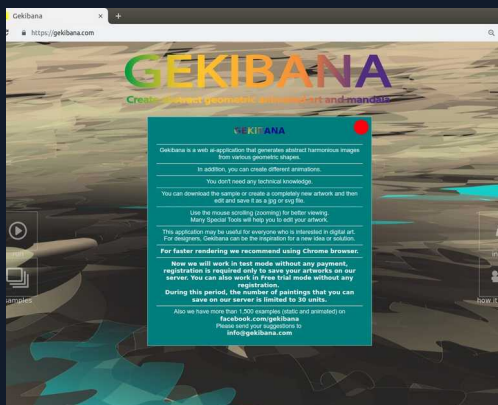
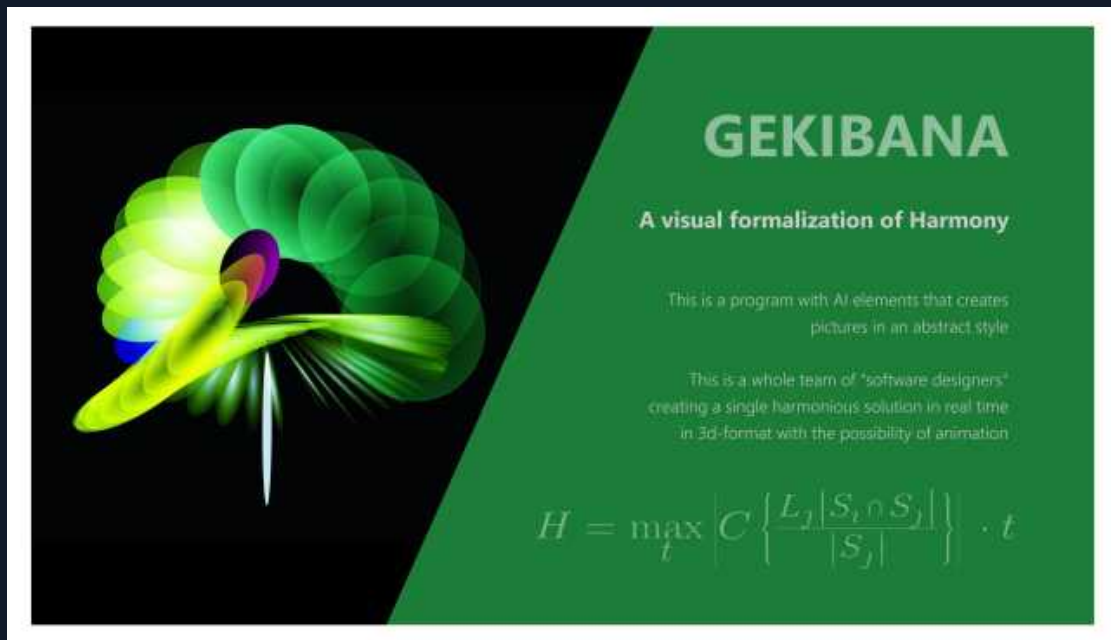
SAMSUNG RESEARCH

Research often produces ideas. Products require decisions. The difficult part is moving between the two.

Work focused on image processing, computer vision, and practical evaluation of new approaches: idea → prototype → evaluation → product decision.

Useful research changes engineering decisions.

CAN AN ALGORITHM BECOME A CREATIVE TOOL?



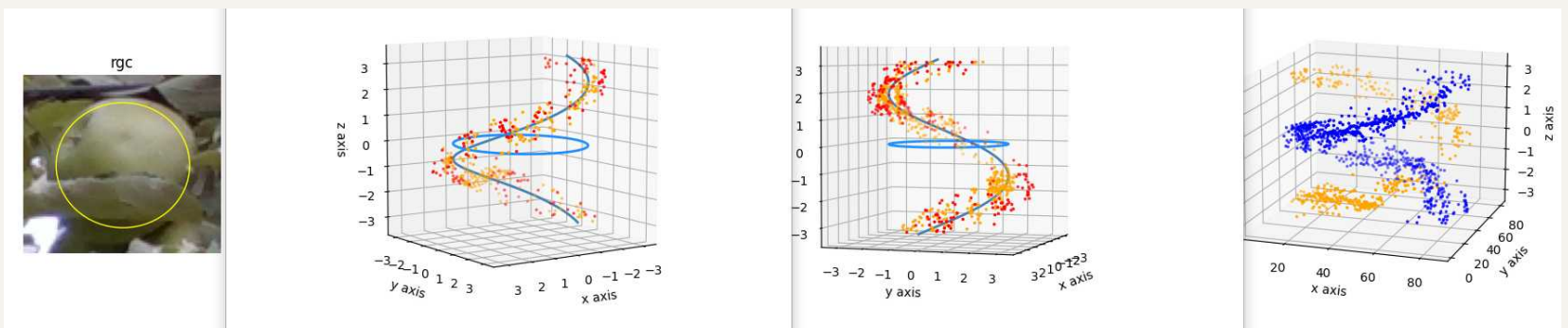
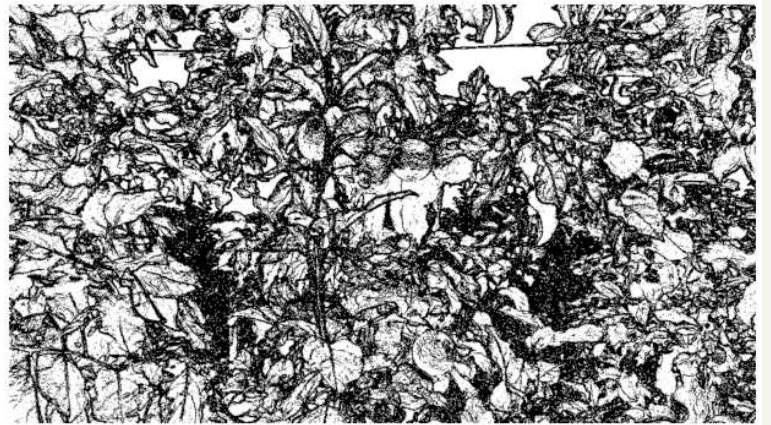
GEKIBANA

Long before generative AI became mainstream, Gekibana explored collaboration between algorithmic generation and human creativity.

Every composition began as a unique algorithmic object. The human remained the final creator; the algorithm became a creative partner.

ALGORITHMS CREATING INSPIRATION

WHAT IF DETECTION STARTS BEFORE DETECTION?



IT ALL STARTS WITH SIMPLE DETECTORS (lines, shapes, etc.)

Most computer vision systems begin with recognition. This architecture starts earlier: before recognition comes representation; before classification comes structure.

Signal → Structure → Representation → Recognition → Decision

Better perception begins with better representation.

WHAT IF THE SIGNAL IS HIDDEN INSIDE NOISE?

```
===== [0.51,0.07] GERO [ WINDOW= -65 10 ]
=====
[POOL COMPARE SUMMARY]
=====
name rows cols ... mean_omni_conflict profit roi
5 CORE_DIVERSITY_75 61 74 ... 0.1838 2.3357 0.2862
6 CORE_DIVERSITY_100 82 74 ... 0.1944 2.0263 0.2515
0 FULL 3473 70 ... 0.2216 1.4674 0.1885
1 SIG_REPS_FIRST 3473 73 ... 0.2216 1.4674 0.1885
2 SIG_REPS_MASS 3473 73 ... 0.2216 1.4674 0.1885
3 SIG_REPS_BEST_DIRECT 3473 73 ... 0.2216 1.4674 0.1885
8 CORE_DIVERSITY_200 165 74 ... 0.2793 0.9567 0.1328
7 CORE_DIVERSITY_150 124 74 ... 0.2635 0.8103 0.1100
9 CORE_DIVERSITY_300 249 74 ... 0.2713 0.5960 0.0818
10 CORE_DIVERSITY_500 415 74 ... 0.3102 0.5055 0.0733
4 CORE_DIVERSITY_50 40 74 ... 0.3167 -0.8454 -0.1237

[11 rows x 9 columns]
=====
summary profit= 12.254818713295563 *** roi= 1.5659094932207207
```

```
===== [1.87,0.28] FRA0 [ WINDOW= -130 10 ]
=====
[POOL COMPARE SUMMARY]
=====
name rows cols ... mean_omni_conflict profit roi
7 CORE_DIVERSITY_150 124 74 ... 0.2835 2.1524 0.3084
10 CORE_DIVERSITY_500 415 74 ... 0.3429 1.8689 0.2844
6 CORE_DIVERSITY_100 82 74 ... 0.2780 1.8985 0.2601
5 CORE_DIVERSITY_75 61 74 ... 0.2625 1.2750 0.1729
8 CORE_DIVERSITY_200 165 74 ... 0.3091 0.5324 0.0771
0 FULL 4551 70 ... 0.2580 0.4197 0.0566
9 SIG_REPS_FIRST 4551 73 ... 0.2580 0.4197 0.0566
1 SIG_REPS_MASS 4551 73 ... 0.2580 0.4197 0.0566
2 SIG_REPS_BEST_DIRECT 4551 73 ... 0.2580 0.4197 0.0566
4 CORE_DIVERSITY_300 249 74 ... 0.2786 -0.2868 -0.0398
9 CORE_DIVERSITY_50 40 74 ... 0.3251 -0.9661 -0.1432

[11 rows x 9 columns]
=====
summary profit= 8.15306922321499 *** roi= 1.1381993414500615
```

```
===== [-0.28,-0.04] ENGO [ WINDOW= -20 10 ]
=====
[POOL COMPARE SUMMARY]
=====
name rows cols ... mean_omni_conflict profit roi
8 CORE_DIVERSITY_200 164 74 ... 0.3486 2.3854 0.3662
5 CORE_DIVERSITY_75 61 74 ... 0.2744 2.1214 0.2924
4 CORE_DIVERSITY_50 40 74 ... 0.2097 2.0903 0.2645
0 FULL 500 70 ... 0.3561 1.6844 0.2616
1 SIG_REPS_FIRST 500 73 ... 0.3561 1.6844 0.2616
2 SIG_REPS_MASS 500 73 ... 0.3561 1.6844 0.2616
3 SIG_REPS_BEST_DIRECT 500 73 ... 0.3561 1.6844 0.2616
6 CORE_DIVERSITY_100 82 74 ... 0.3250 1.7331 0.2568
9 CORE_DIVERSITY_300 248 74 ... 0.3189 1.3970 0.2051
7 CORE_DIVERSITY_150 124 74 ... 0.3404 -0.1713 -0.0260
10 CORE_DIVERSITY_500 414 74 ... 0.3513 -0.2810 -0.0433

[11 rows x 9 columns]
=====
summary profit= 16.01234770915343 *** roi= 2.362007154870368
```

```
===== [1.76,0.25] ENG1 [ WINDOW= -20 10 ]
=====
[POOL COMPARE SUMMARY]
=====
name rows cols ... mean_omni_conflict profit roi
7 CORE_DIVERSITY_150 124 74 ... 0.2370 2.8539 0.3740
8 CORE_DIVERSITY_200 165 74 ... 0.2913 2.6284 0.3709
10 CORE_DIVERSITY_500 415 74 ... 0.3080 1.7563 0.2538
9 CORE_DIVERSITY_300 249 74 ... 0.2963 1.7697 0.2515
5 CORE_DIVERSITY_100 82 74 ... 0.2140 1.8435 0.2346
4 CORE_DIVERSITY_50 40 74 ... 0.4217 -0.6513 -0.1126
0 FULL 5254 70 ... 0.2768 -1.1109 -0.1536
1 SIG_REPS_FIRST 5254 73 ... 0.2768 -1.1109 -0.1536
2 SIG_REPS_MASS 5254 73 ... 0.2768 -1.1109 -0.1536
3 SIG_REPS_BEST_DIRECT 5254 73 ... 0.2768 -1.1109 -0.1536
5 CORE_DIVERSITY_75 61 74 ... 0.2592 -1.2753 -0.1721

[11 rows x 9 columns]
=====
summary profit= 4.481749636484671 *** roi= 0.5855726191377384
```

== OMNIBUS_RISK_CONTROL == GLADIATOR == 110+68

110 | AADAHHHAH | tesla= 0.351 clinch= 0.705 | purity= 3.603 coh= 0.502 margin_gap= 0.357 | acc=0.600

* pred_bh • pred_ba • pred_ch • pred_fmia • pred_PPh • pred_0h • pred_1h

68 | DHHAHDAHD | tesla= 0.446 clinch= 0.746 | purity= 3.639 coh= 0.403 margin_gap= 0.267 | acc=0.400

* pred_bh • pred_ba • pred_ch • pred_hd • pred_fmia • pred_PPah • pred_3d

#	FTR	MKT	STAKE	[H D A]	S	RES	PROFIT
0	D	H	AD	[1.46 4.33 6.00]	●●●●●●●●	+2.33	2026-02-24 Middlesbrough
1	H	H	AH	[1.61 3.70 4.33]	●●●●●●●●	-0.39	2026-02-24 Southampton
2	D	H	DH	[1.68 3.75 4.33]	●●●●●●●●	+1.75	2026-02-24 Swansea
3	A	A	A	[3.30 3.25 2.15]	●●●●●●●●	+1.15	2026-02-24 Watford
4	D	D	DH	[1.91 3.40 4.00]	●●●●●●●●	+1.40	2026-02-24 West Brom
5	H	A	DH	[2.01 3.40 3.50]	●●●●●●●●	+0.01	2026-02-24 Wrexham
6	H	A	AH	[2.40 3.30 2.82]	●●●●●●●●	+0.40	2026-02-25 Millwall
7	H	H	AH	[1.15 6.50 15.00]	●●●●●●●●	-0.85	2026-02-25 Norwich
8	A	A	AD	[2.40 3.40 2.70]	●●●●●●●●	+0.70	2026-02-25 Sheffield Utd
9	H	H	DH	[1.79 3.50 4.50]	●●●●●●●●	-0.21	2026-02-25 Stoke

LEAGUE= ENG1
TOTAL: 10/10 (100.0%) | total_games=10
FLAT_BETS total_stakes= 19 | win_money=25.29 | profit=+6.29 | roi= +0.33
alarm_stakes= 9 | win_money=13.59 | profit=+4.59 | roi= +0.51

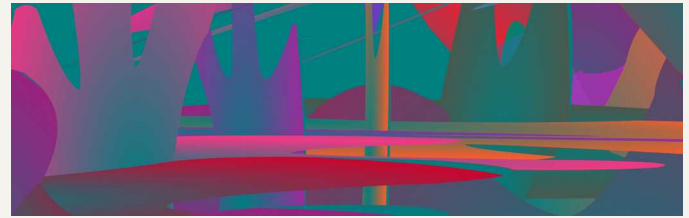
PATTERN DISCOVERY IN NOISY SYSTEMS

Some systems provide clean observations. Others provide uncertainty, contradictions, false correlations, and weak signals.

Recent research focused on discovering persistent patterns inside noisy environments and validating them against future unseen data.

Signal Extraction • Ensemble Reasoning • Future-Data Validation

THE PATTERN



IDEA



REPRESENTATION



WORKING CODE



RESULT

Different domains. Different technologies. Different industries.

The same way of thinking appears again and again: enter an unfamiliar domain, discover a useful representation, and turn it into a working system.

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