

YVISION

The Reality Compiler

Five Worlds. Five Humans. One Platform.

"What if you could step inside reality before it happens? World models are not simulations of the past — they are sovereign replicas of the present, causal, explorable, and actionable — where humans remain the authors of every consequential decision."

Nature

4 billion years of evolutionary intelligence — the deepest computational substrate.

Humans

Tacit knowledge, embodied intuition, moral authority. Every consequential decision.

Machines

The engine of scale and speed. Extraordinary power. Zero authority.

What is a World Model?

A world model is a living, causal replica of reality — not a photograph of what happened, but an interactive engine that understands why things happen and what would follow if you changed them. YVision's Reality Compiler builds these models from sensors, expert knowledge, and the deep patterns encoded in nature itself.

<p>01 · REFERENCE</p> <p>Tag the world</p> <p>Smart spatial anchors bind every object and event to the model in real time.</p>	<p>02 · ANNOTATE</p> <p>Capture expertise</p> <p>Human experts narrate what they know. Tacit knowledge becomes structured intelligence.</p>	<p>03 · SIMULATE</p> <p>Ask 'what if?'</p> <p>The IDEAS engine generates branching futures — best case, worst case, optimal intervention.</p>	<p>04 · IMMERSE</p> <p>Enter the model</p> <p>AR and VR transform intelligence from something you read into something you experience.</p>
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Maria grows smarter than the weather.

It is 5 a.m. in the Douro Valley. Maria has farmed these vineyards for thirty years. Now she puts on her AR glasses and steps into a world that has been watching her land all night.

WHAT SHE SEES

Through her glasses, every row of vines glows with a colour. Green means thriving. Amber means water stress is building. A cluster of amber near the eastern slope catches her eye — the model has detected soil moisture dropping below the threshold that historically precedes yield loss, drawing on fungal network patterns borrowed from how mycorrhizal systems distribute nutrients in forests. She hasn't walked that slope yet. The model already has.

WHAT THE MACHINE DOES

The IDEAS simulation engine runs three futures in parallel: do nothing (yield falls 18%), irrigate the whole eastern sector (cost: high, water use: heavy), or irrigate only the three specific rows where root-zone sensors show the deficit is already critical. Nature's own logic — how ant colonies route resources only where they're needed — shapes the third option. The model recommends it. The recommendation appears on Maria's display with its confidence score.

WHERE MARIA DECIDES

Maria looks at the three rows. She knows this slope. There's a buried stone wall that affects drainage in ways no sensor has yet mapped. She overrides two of the three rows, and marks the anomaly for the system to learn. The model updates. Her knowledge becomes part of it. Next season, the system will know about the wall.

HUMAN ALWAYS IN THE LOOP

SEES Model flags what sensors detect, not what to do about it.	QUESTIONS Maria can ask 'why?' and the full causal chain is shown.
OVERRIDES Every machine recommendation is a suggestion, not a command.	TEACHES Her correction enriches the world model permanently.

João doesn't just watch the match. He rewrites it.

Half-time. Sporting are 1-0 down. João sits in his living room in Lisbon, and opens the ARENA app. He has a theory about what went wrong.

WHAT HE CAN DO

The match exists as a live world model — every player's position, speed, fatigue index, and tactical zone tagged in real time. João pulls up the formation overlay and drags player 9 off the pitch. He selects a substitute from the bench. The IDEAS engine runs the next 45 minutes of the match under this new configuration, drawing on thousands of comparable match states, opponent patterns, and the substitute's own performance history under pressure.

WHAT THE MODEL SHOWS

With the substitution, the simulation shows a 63% probability of an equaliser in the last 20 minutes — up from 34%. But it also flags a risk: the tactical change opens a channel on the left flank that the opponent's winger has exploited in three previous matches. The model doesn't tell João what Sporting should do. It shows him the tradeoffs. He is coaching with data, not being coached by an algorithm.

WHAT MAKES THIS HUMAN

The real coach in the stadium is making the same calculation — but with thirty years of embodied knowledge João doesn't have. The world model closes that gap just enough that João, a passionate amateur, can understand what the coach is weighing. The best surprises on a football pitch — the perfectly timed deviation from the expected — remain irreducibly human. The model celebrates that.

HUMAN ALWAYS IN THE LOOP

EXPLORES

João proposes changes; the model simulates consequences.

DEBATES

Share simulations with friends; fan intelligence compounds.

COMPARES

Multiple futures shown side by side, not a single answer.

ADMIRES

When the coach surprises the model, he sees why it matters.

Sara rides through the brain of the city.

Sara steps into an autonomous vehicle on a Monday morning in Lisbon. The city is the world model. The car is an agent inside it. She can see what it sees.

THE VEHICLE'S WORLD MODEL

On Sara's seat display, the city unfolds as a live causal map. Every intersection has a confidence score. Green means the model knows this junction deeply — thousands of tagged observations, annotated by traffic engineers, shaped by ant-colony routing algorithms that distribute flow the way forests distribute nutrients. Red means novelty: a road closure the model has encountered only twice before.

WHEN THE UNEXPECTED HAPPENS

The vehicle reaches the junction the model flagged. A construction crane has partially blocked a lane — an element not in today's map. The vehicle slows. The world model activates analogy reasoning: what do similar partial obstructions in its history suggest? Three previous cases surface. The vehicle proposes a route. Then it pauses. The display flashes a gentle prompt to Sara.

SARA'S MOMENT OF SOVEREIGNTY

"Unusual obstruction ahead. Model confidence: 71%. Recommended: reroute via Av. da Liberdade (adds 4 min). Proceed: continue with caution. Your choice." Sara confirms the reroute. The vehicle proceeds. The event is logged. Sara's confirmation is not a formality — it is a data point that the world model needs to learn how humans respond to ambiguity in this part of the city. Her decision makes the next passenger safer.

HUMAN ALWAYS IN THE LOOP

<p>INFORMED</p> <p>Sara sees the model's confidence, not just its conclusion.</p>	<p>CONSULTED</p> <p>Novel situations escalate to human judgement by design.</p>
<p>SOVEREIGN</p> <p>Override is always available and always logged.</p>	<p>CONTRIBUTING</p> <p>Every decision enriches the urban world model.</p>

Ant colony traffic routing Real-time STAG city map Analogy-based novelty handling Confidence-scored decisions

Dr. Carvalho rehearses before the first incision.

Tomorrow morning, Dr. Carvalho will perform a complex liver resection. Tonight, she stands inside her patient's body.

THE ANATOMICAL WORLD MODEL

From CT and MRI scans, HELIX has constructed a patient-specific anatomical world model. Every organ, vessel, tissue plane, and anatomical variant is tagged — each with a risk score derived from thousands of annotated surgical cases. The immune response patterns of a healthy liver, extracted from biological research, define what 'normal' looks like so that deviations flag automatically. In VR, Dr. Carvalho walks through the liver as though it were a building.

THE SIMULATION LAYER

She rehearses the resection. The IDEAS engine models bleeding risk at each proposed incision plane, drawing on 847 comparable cases. It surfaces a vascular anomaly her patient has — a variant she has seen only twice in her career. The model has annotated it with the approaches two other surgeons used in similar cases, including their outcomes. She is not reading a textbook. She is consulting a community of surgical memory.

IN THE OPERATING ROOM

The next morning, AR overlays project the pre-surgical plan onto the operative field in real time. When tissue planes diverge slightly from the model, the AR display updates — recalibrating the overlay to the actual anatomy. If a metric crosses a threshold, the system alerts. But every cut is hers. The world model is a co-pilot, not the pilot. The surgical judgement — when to pause, when to adapt, when to trust thirty years of embodied knowledge over a simulation — remains entirely human.

HUMAN ALWAYS IN THE LOOP

REHEARSES VR surgery before the real procedure — consequence-free learning.	CONSULTS Accesses community surgical knowledge without interrupting flow.
ADAPTS Model updates in real time as anatomy diverges from the plan.	DECIDES Every incision is a human choice. The model never holds the scalpel.

Tomás doesn't study photosynthesis. He lives it.

Tomás is 16 and deeply bored by his biology textbook. His teacher opens the Imagination Station. Tomás puts on the headset. He shrinks to molecular scale.

THE WORLD OF ABSTRACT CONCEPTS

The world model is not a diagram. It is a living replica of a chloroplast. Tomás can move through it, pick up molecules, and watch them interact. The concept of photosynthesis is no longer something he reads — it is something he feels as spatial logic. The causal structure is visible: block the light here, and ATP production cascades there. He breaks the chain. He watches the consequences. He repairs it.

THE ADVERSARIAL LAYER

The Surprise Calculus introduces a perturbation: what if a key enzyme is deleted? The model, drawing on the same logic that governs evolutionary stress-testing in natural systems, generates the cascading failure. Tomás has to diagnose it. He proposes a fix. The system evaluates his intervention — not with a grade, but with a consequence: the ecosystem either recovers or degrades further. He tries again. Failure is informative, not punitive.

THE GATEWAY TO THE REAL WORLD

From the molecular world, the model zooms out to a forest ecosystem — the same photosynthesis concept now operating at planetary scale. Tomás sees the connection. He asks the AI companion: 'What if CO2 doubles?' The simulation runs. The comparison shocks him. He doesn't just understand climate change. He has experienced its causal logic. He leaves the session with a question he invented himself — the most disruptive thing education can produce.

HUMAN ALWAYS IN THE LOOP

EXPLORES

Student navigates the concept world at their own pace and scale.

INVENTS

Students propose interventions — model evaluates by consequence.

BREAKS

Adversarial layers let students test the limits of understanding.

WONDERS

The best outcome: a question the model didn't anticipate.

The Triad That Holds It All Together

YVision is not a Human–Machine system. It is a triadic intelligence: Nature generates the deepest patterns; Humans frame, interpret, and decide; Machines simulate, scale, and surface. Remove any of the three and the loop breaks. The human is never extracted from the centre.

Nature	Humans	Machines
4 billion years of evolutionary stress-testing. Fungal networks, immune systems, swarm logic — the deepest library of solutions to hard problems. Not metaphor. Computational substrate.	The irreplaceable loop. Tacit knowledge, embodied intuition, moral authority, adversarial creativity. Machines inform. Humans decide. Every world model annotation is a human gift to the future.	The engine of scale and speed. Simulating millions of futures, holding entire cities in memory, running surgical scenarios at millisecond latency. Extraordinary power, zero authority.

"The next dominant platform is not software. It is the ability to model, simulate, and act on reality — in real time, before reality happens. And in every world we build, the human remains the only author that matters." — YVision, 2026

Nature · Humans · Machines