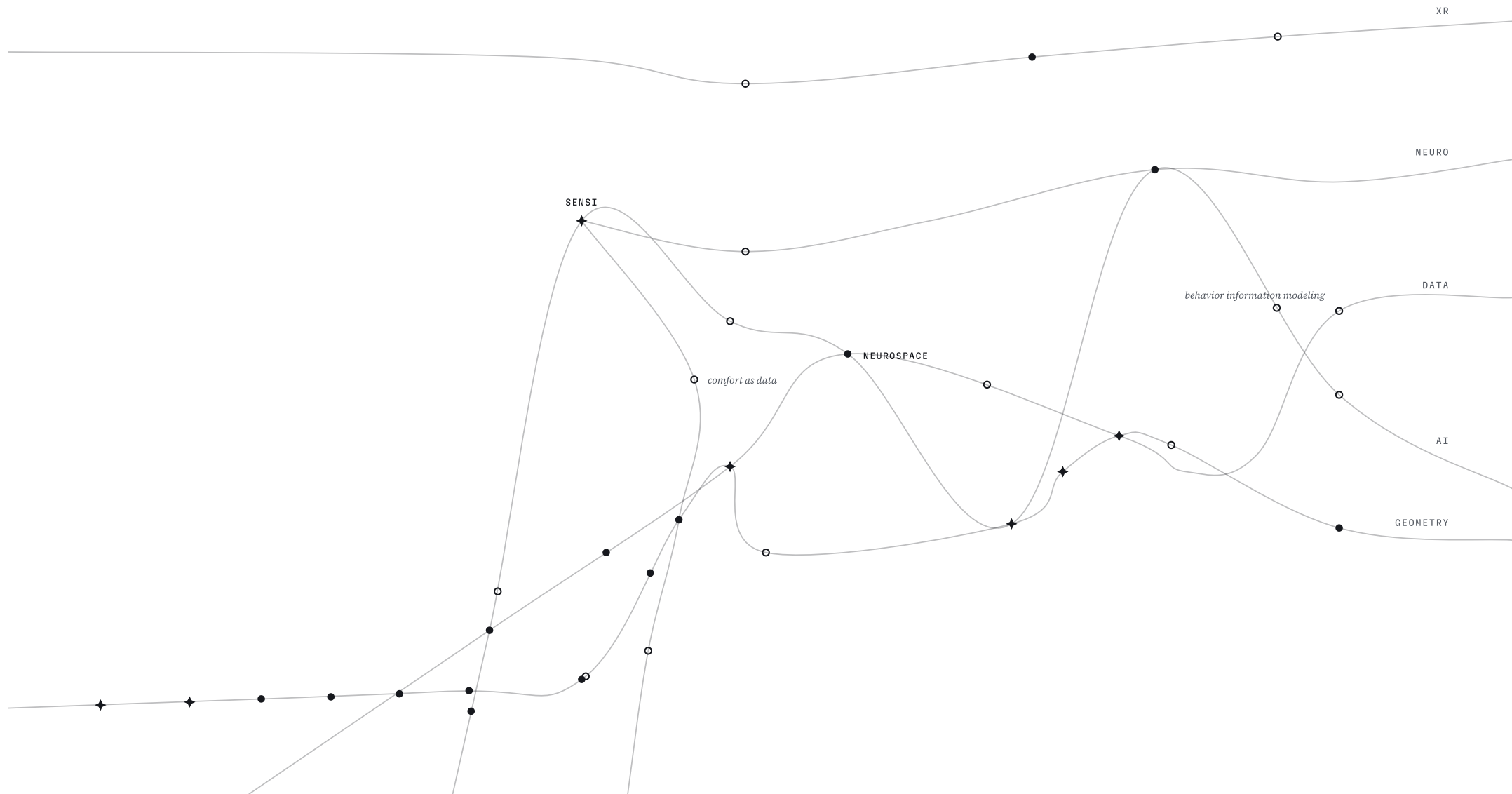




EMILIE EL CHIDIAC

Design Technology Architect. I work with design, technology and minds.

PORTFOLIO • 2026 • + MACAD AWARDS 2026 • DESIGN COPILOTS • WINNER



emiliechidiac.com

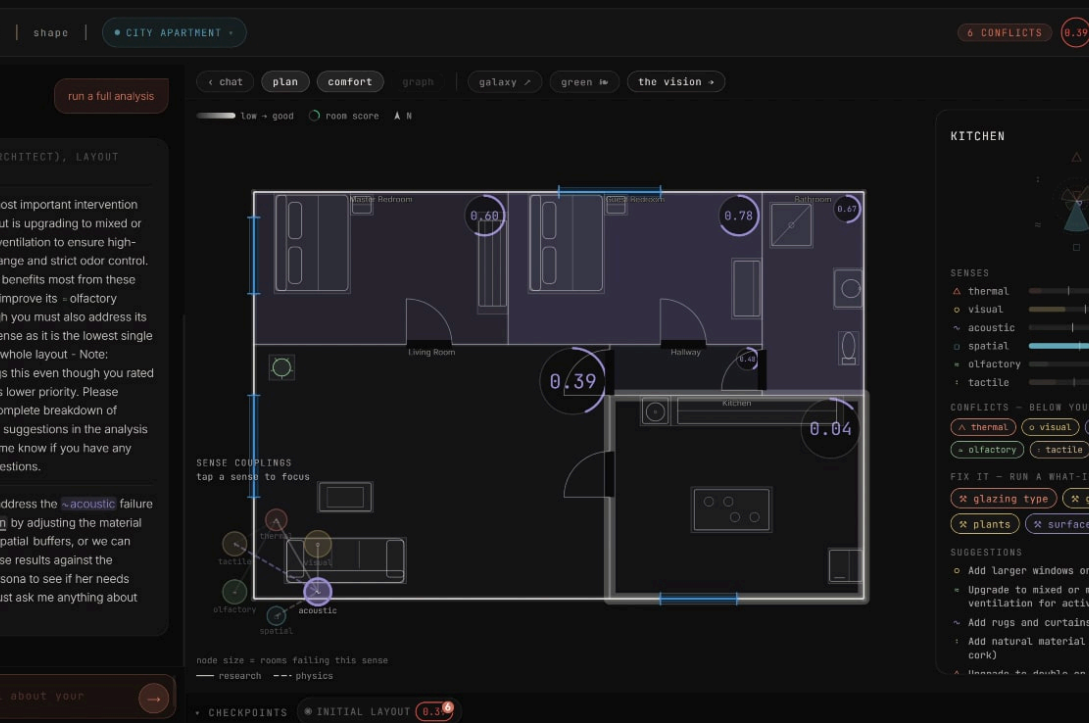


PLATE 01 • SENSI

P-101

COMPUTATION & RESEARCH

MACAD STUDIO • TEAM OF 4

MACAD AWARDS 2026 • DESIGN COPILOTS • WINNER

Sensi

Comfort, designed on purpose: a copilot scores a plan across six senses, calibrated to a person, not an average.

WHAT

Every tool in the stack could tell us how a building performs. None of them would say how a room feels. Sensi closes that gap: a copilot that reads a floor plan and scores comfort across six senses (thermal, visual, acoustic, spatial, olfactory, tactile), calibrated to one person at a time, not an average. Project lead, A to Z, built with a team of four: Lakzhmy Mari Zaro, María Sánchez Domínguez, Charles Abi Chahine, and me.

WHY

Comfort is usually the thing we hope shows up after the design is done. I wanted it to be a layer you can interrogate while the plan is still soft, because you do not walk into a room and average your experience: the thing that is wrong is the thing you notice.

HOW

Onboarding calibrates the copilot to the person in the room, their thermal grudges, their noise tolerance. Comfort without a subject is just weather.

One action classifier, a single LLM call per turn, routes each request through a LangGraph state graph: analyze, edit, preview, audit.

A coupling matrix ripples every change into the neighbouring senses, so a fix that quietly breaks another score gets flagged, not hidden. *n.b. the six scores argue like a family. the coupling matrix is the dinner table.*

The copilot suggests edits the layout can absorb, previews them without committing, then renders the comparison and hands over the report.

WHAT CAME OF IT

We benched the judgment before trusting it: two LLM providers scored the same three scenes end to end, including a living room arranged to fail. They mostly agreed, and it would have been easy to call that validation. We wrote agreement is not truth into the notes instead, and kept every disagreement as data.

NeuroSpace

Your room is doing something to you right now: move a slider and watch a browser score it live.

WHAT

You are sitting in a room right now, and its defaults are quietly working on you: the ceiling height nudging your cortisol, the daylight setting your circadian clock. NeuroSpace makes that invisible layer legible: move a slider and the room rebuilds while a score answers back, live. I built it on my own: a Grasshopper definition doing the heavy geometry on the server through Rhino.Compute, Three.js drawing the room in the browser, and a scoring pass that estimates the behavioral effect the moment you let go.

WHY

This is the thesis I keep circling: BIM, reframed from Building Information Modeling to Behavior Information Modeling. The information that matters is not just what a building is made of; it is what the building is doing to the person inside it.

HOW

Describe the room as parameters, not geometry: ceiling height, wall count and curvature, openings, organic form, plants. Every one is a slider.

Send the parameters to a Grasshopper definition on the server; Rhino.Compute evaluates it and streams the heavy geometry back, so the browser never has to model anything itself.

Draw the returned room with Three.js. Geometry is the slow path; it only recomputes when the shape actually changes.

Score the behavior on the fast path, in the browser, the instant a slider settles: a transparent weighted sum over the dimensions the research cares about. No server round trip, so the number answers as fast as you can drag.

NEUROARCHITECTURE LAB · IAAC MACAD 2025-2026

NeuroSpace

Designing for Neurological Wellbeing
Turning BIM into Behavior Information Modeling

An interactive tool that lets you design a parametric space through the lens of neuroarchitecture. Manipulate spatial variables — curvature, surface geometry, scale, daylight access, and biophilic elements — and watch how your design affects a live **NeuroScore**, a measure of neurophysiological stress potential grounded in peer-reviewed research.

Based on research by Dr. Cleo Valentine · Architectural Neuroimmunology

By [Emilie El Chidiac](#)

Enter the Lab ↓

7

SPATIAL PARAMETERS

5

NEURO DIMENSIONS

0-100

NEUROSCORE RANGE

WHAT CAME OF IT

The score is a heuristic, not an instrument. It leans on neuroarchitecture research and turns it into weights you can read in the public repo, which means you can also argue with them. *n.b. a score you can argue with beats a number you have to trust.* It estimates; it never measures your body, and it shows every assumption on the way to the number so you are free to overrule it.



P-106

■ COMPUTATION & RESEARCH

MACAD GENERATIVE AI · WITH CHARLES ABI CHAHINE

+ JURY AWARD

lEgoarCh

A render is only a promise until the bricks fit: AI imagines the set, code makes it actually buildable.

WHAT

A render is a promise, not a product: you cannot snap a JPEG together on your living-room floor. lEgoarCh takes a text prompt and returns a LEGO Architecture set that is digitally verified buildable: AI imagines it, deterministic code makes it snap together, brick by brick, out of real catalog parts. Built with Charles Abi Chahine, end to end as a pair.

WHY

The inspired gesture is cheap now; anyone can generate a thousand renders before lunch. The interesting problem moved to verification: what does it take to turn a generated image into something that provably holds together?

HOW

A LoRA tuned on a 40-image dataset teaches FLUX the LEGO Architecture look; the prompt becomes a styled render.

TRELLIS lifts the render into a 3D mesh, and the mesh is voxelized into brick space.

An optimizer places real catalog bricks into the voxels, enforcing connectivity, support, and perceptual color accuracy.

The set exports as LDraw, the format the brick world already speaks.

WHAT CAME OF IT

The most instructive moment was a failure: an intermediate model came back connected and supported, yet not legible as architecture. Structurally sound and visually wrong is still wrong, so legibility joined the constraints. The final pipeline was benched on three buildings, and the jury gave it their award.

P-105 COMPUTATION & RESEARCH

MACAD STUDIO • DATA TEAM OF 3 • LIVE APP

+ STUDIO AWARD

The Lungs

The studio's data was the architecture: a live app running a hyperbuilding designed to filter a city's air.

WHAT

Santiago has an air problem, the kind that sits in the valley like a guest who will not leave. The Lungs is a hyperbuilding designed to filter 12 million m³ of air a year, and the data team of three (María Sánchez Domínguez, Lakzhmy Mari Zaro, and me) built the live web app the whole studio ran on while designing it.

WHY

The studio's data was the architecture. Three design teams, ten weeks, one shared organism: somebody had to build its nervous system, and that turned out to be the most architectural thing in the room.

HOW

Build the platform in Vue 3, Vite, and Tailwind: KPIs, timelines, and team status, live for everyone instead of buried in spreadsheets.

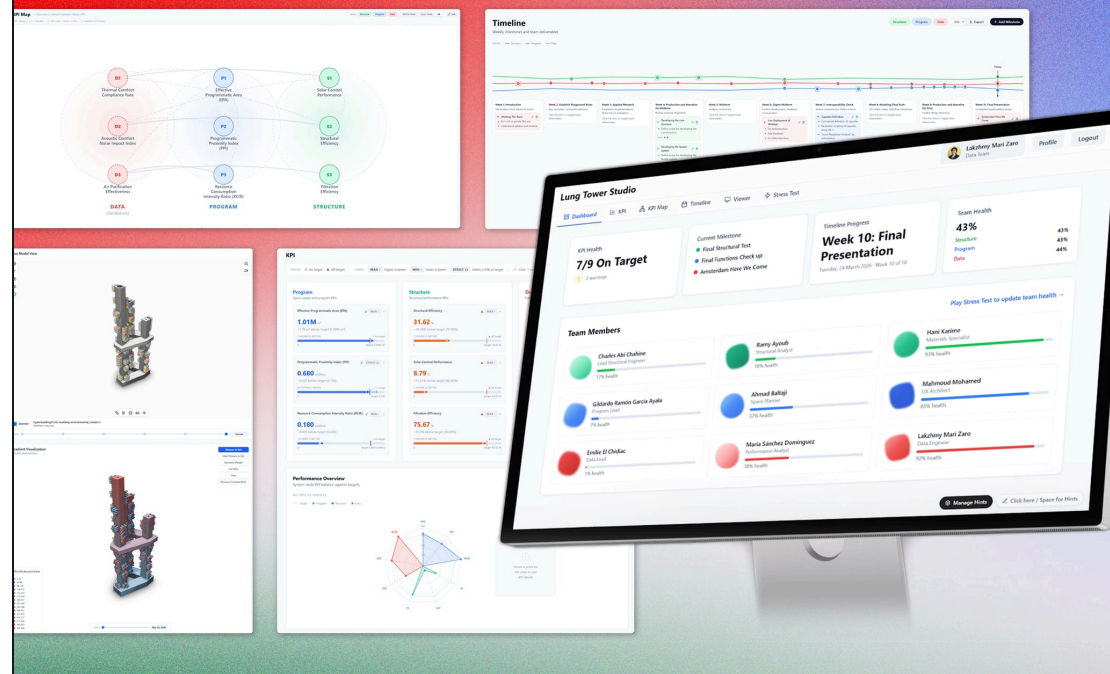
Stream the 3D models in through Speckle, so performance data sits on geometry, not beside it.

Keep it running while the studio designs on top of it: the app was not documentation, it was the project's operating system.

WHAT CAME OF IT

The platform tracked three design teams across the full ten-week studio. Building a platform alongside the project it supports is messy, and the mess is the lesson: the building breathes, so does the app.

PLATE 04 • THE LUNGS





P-103

■ COMPUTATION & RESEARCH

MACAD STUDIO • TEAM OF 4

✦ STUDIO AWARD

The Huddle

Stop fighting the wind and build with it: modules that grow along the gusts instead of bracing against them.

WHAT

In Punta Arenas the wind never stops, so we stopped fighting it. The Huddle is a research and education hub grown from 4×4×4 m modules aggregated along the wind itself, wrapped in an envelope of three panel types (Shields, Lenses, Gills) that turns the facade into a readable map of climatic forces. A team of four, all hands on everything: María Sánchez Domínguez, Lakzhmy Mari Zaro, Charles Abi Chahine, and me.

WHY

Wind is the site's most abundant force, and the vernacular Kawesqar huts already knew what to do with it. Accepting the wind as a design partner, instead of a problem to brace against, turns the harshest constraint into the organizing logic of the whole building.

HOW

WASP grows the module cluster along the wind patterns, solar exposure, and program, the way the Kawesqar huts huddled.

Kangaroo settles the layout; Alpaca4D checks the structural behavior of the result.

A Global Index algorithm distributes the three envelope panels, so the facade reads the climate back to you.

Vertical turbines sit in the aggregation's own wind tunnels, harvesting the force the form was grown from.

WHAT CAME OF IT

Because the building is an aggregation of known parts, the exact number of parts is known at any moment: the architecture stays buildable arithmetic, not a sculpture. Wind, once a problem, ends up the project's material.

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■ COMPUTATION & RESEARCH

MACAD · SOLO

A Ballooning Market

Physics is the difference between a mess and a roof: the balloons ghosted through each other until Kangaroo gave them awareness.

WHAT

A historic Cairo market receives a new roof of pressure-packed balloons that borrows the existing steel frame without modifying it. *n.b. the frame is the client, the balloons are the tenants, the solver is the lease.* Each balloon is a Kangaroo body with collision, inflation, and anchor goals; the settled cluster is meshed with Dendro and lit through CMY membranes in D5.

WHY

A building like Bab al-Luq usually gets offered two futures: a museum piece that can never be touched, or a cold glass-and-steel box dropped in the middle and called modern. Pneumatic parasitism is the third option: a soft new life that hugs the old bones instead of replacing them.

HOW

Trace the frame of Bab al-Luq; mark the nodes that can host anchors.

Seed balloons in the volume; declare radii, no physics yet.

Add collision and inflation goals; anchor the cluster; let the solver settle.

Mesh the settled cluster with Dendro; render daylight through the CMY membranes in D5.

WHAT CAME OF IT

The first run failed in an instructive way: the balloons had no physical awareness of each other, just ghosting through one another in a chaotic, colorful mess. The fail stayed in the record on purpose; people read honesty faster than polish. And the tuning became the craft: collision too low and they cuddle, too high and they panic. You tune it like a thermostat.

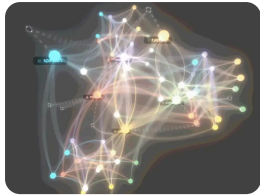
PLATE 06 · A BALLOONING MARKET



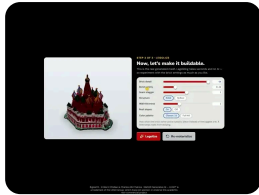
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EVERYTHING • 21 PROJECTS + 14 THOUGHTS • EMILIECHIDIAC.COM

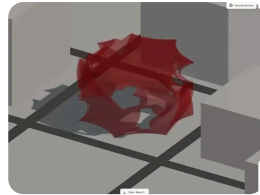
■ COMPUTATION & RESEARCH ♦ DESIGN & PRACTICE ▲ EXPLORATIONS + RECOGNITION



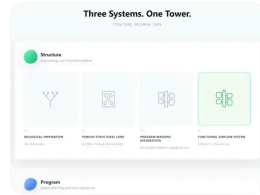
■ Sensi
P-101 • MACAD •
+



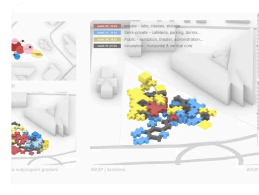
■ IEgoarCh
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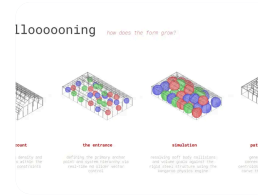
■ NeuroSpace
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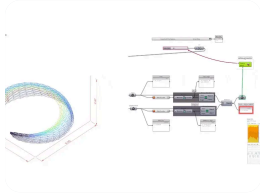
■ The Huddle
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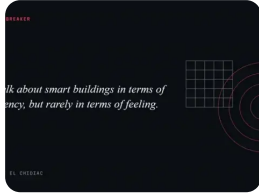
■ A Ballooning Market
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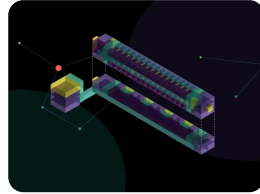
■ Encoding Urban Risk
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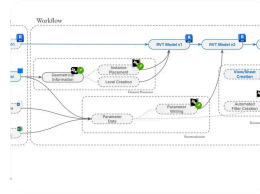
▲ Cappelletti Pavilion
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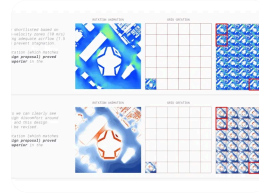
■ Optimizing for the Mind
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■ Narkomfin as a Graph
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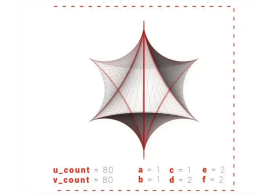
■ Data into Geometry
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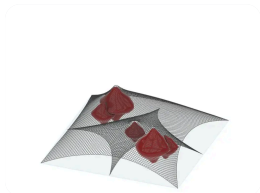
■ Tsukiji Fish Market
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▲ Chair Simulation
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▲ Astroidal Ellipsoid
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▲ A Playscape
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▲ The Homage
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♦ Verve City Walk
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♦ Rings of Mars: Ring 4000
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+



♦ The Encounter
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♦ Falcon Square
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▲ XR for Education
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THE THOUGHTS

○ <i>behavior information modeling</i>	T-101 • JAN 2026	○ <i>neuroaesthetics</i>	T-102 • DEC 2025	○ <i>physics solvers</i>	T-103 • APR 2026
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EDUCATION

Master in Advanced Computational Design for Architecture II
· IAAC, Barcelona

MaCAD Awards 2026 winner. IAAC Women in Tech scholarship.

Bachelor of Architecture (NAAB & NASAD accredited) ·
Lebanese American University, Byblos

Dean's Distinction List. Honor scholarship all consecutive terms.

CERTIFICATES

PAACADEMY · AI-Augmented Creative Workflows: Generative Techniques

PAACADEMY · Taking Control 4.0: ControlNet x ComfyUI in Architecture

PAACADEMY · Synthetic Vernacular using Artificial Intelligence 2.0

PAACADEMY · Revit Flow 3.0 with Rhino.Inside: Dynamic Facades

LANGUAGES

Arabic (native) · English (advanced) · French (advanced)

EXPERIENCE

Aug 2024 – Present

Design Technology Architect · Dynamic Solution Co., Kuwait

Aug 2023 – Jul 2024

Design Architect · SOMA, Dubai | Beirut

Jan 2022 – Present

Design Architect · Self-employed

Jan 2022 – Aug 2022

Architectural Designer · Jemma Chidiac Architects, Beirut

Sep 2021 – Jan 2023

Research Assistant · Lebanese American University XR Lab, Byblos

AWARDS & RECOGNITION

2026 MaCAD Awards at IAAC, Design Copilots category winner: Sensi. Shown in the IAAC annual exhibition

2026 Jury and studio awards at IAAC: IEgoarCh, The Lungs, The Huddle

2025 IAAC Global Summer School, Circular Construction: Shifting Value, Barcelona

2024 Volume Zero Marsception: Top 50, with Charles Abi Chahine (Rings of Mars: Ring 4000)

2023 Tamayouz Excellence Award: Top 100 graduation projects of 2023, from 422 teams (The Homage)

2022 Ctrl Act Design, The Cemetery Challenge: shortlisted finalist (The Encounter)

SKILLS

AI workflows · AI agents and copilots (LangGraph) · evaluation and benchmarking of model output · GenAI pipelines (ComfyUI · ControlNet · LoRA · FLUX) · AI-augmented design workflows · design automation

Ships with · Python · React · Vue · TypeScript · Three.js · WebGL · FastAPI · Speckle · Rhino.Inside · Rhino Compute

Domain · human experience · occupant wellbeing · daylighting · evidence-based design · research design · evaluation methods · benchmarking · human-AI interaction · demo and narrative craft



this is what's on my mind

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