SELECTED WORK · 2026

Ryan Sehgal

Industrial Designer / Products, mechanisms, design research



RISD BFA Industrial Design, 2028

Open to internships anywhere in the US

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About

I study Industrial Design at RISD and take entrepreneurship courses at Brown.

I like starting with a real problem and the people who have it. I talk to them, build something rough quickly, and keep testing until it works.

I learn fast and by doing. When a project needs a skill I do not have, I go and get it, whether that is CNC machining, carbon-fiber layup or writing software with AI.

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INDUSTRIAL DESIGN · INDEPENDENT PROJECT · SPRING 2026

Telescoping Hook Tool

One ceiling hook that locks at six lengths. This prototype covers 4′8″ to 8′, the shorter fixed hooks on a truck's rack; a longer version for higher ceilings is next. Designed with Providence firefighters, built in aluminum.

6 locked lengths, from 4′8″ to 8′	**9** firefighters interviewed at 3 stations
0 open holes: it locks by shape, not grip	**$119** working aluminum prototype

Role Research, design, CAD, prototyping
Field partner Providence Fire Department



Full case study: ryansehgal.com/docs/hook-tool/ →

Telescoping Hook Tool: how it was done

PROBLEM

Six hooks for one job

Trucks carry a fixed hook for every ceiling height, 4 to 14 ft.

WHY IT WAS HARD

The lock fails

Friction locks slip when you pull a ceiling. Pin locks jam with wet plaster.

MY ANSWER

A hinged latch

It drops into slots in the rod and holds by shape, with nothing open for debris.

RESULT

It works in metal

A full-scale aluminum prototype that locks at each slot from 4′8″ to 8′ and releases by hand. Longer reach is next.



01 The problem: a rack of fixed hooks on every truck



02 Fieldwork with 9 firefighters



03 The latch drops into a slot and locks by shape



04 Full reach beside the collapsed tool

PRODUCT DESIGN INTERNSHIP · BREATHEEASY LABS, DELHI · JUL–AUG 2026

Air Purifier

I made an existing metal air purifier 35% smaller while it moves 10% more air, just as quietly, and took it from test rig to factory drawings.

–35% smaller footprint	**+10%** airflow at full speed, +13% on average
Same noise level, held while both changed	**5** internal layouts built and tested

Role Product Design Intern
Tools SolidWorks, airflow testing, toleranced drawings
Worked with Engineers, the factory and sales



Full case study: ryansehgal.com/docs/air-purifier/ →

Air Purifier: how it was done

PROBLEM

Smaller usually means worse

A cramped airflow path costs airflow or adds noise.

WHY IT WAS HARD

Everything competes for space

The fan, filters and a controller on a side wall all fought for room.

MY ANSWER

Go circular

Wrap the body around the round fan and move the controller onto the fan.

RESULT

Smaller, stronger, as quiet

35% smaller, 10% more airflow, same noise. Now moving into production.



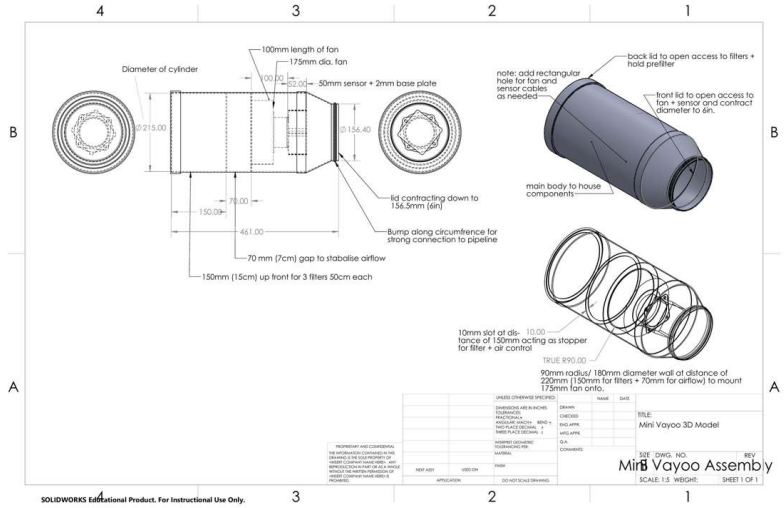
01 Before: the original boxy unit



02 Measuring airflow for each smaller layout



03 Final: three filters load from the back



04 Toleranced manufacturing drawing

PRODUCT DEVELOPMENT + BRAND · HILL FARM ORGANICS, PALAMPUR, INDIA · DEC 2025–JAN 2026

Jiwa On Tap

A café draught dispenser for kombucha, built by reshelling a stock chest freezer, so Hill Farm Organics could pour on tap instead of selling bottles.

4 of 8 targeted cafés signed on	**2** flavours pouring at the first café
0 custom refrigeration: a stock freezer keeps it cold	**2** brands built on the same frame

Role Concept, industrial design, brand, B2B pitch
Fabrication Local metalworkers and carpenters, to my drawings
Status Built and pouring at a partner café

Full case study: ryansehgal.com/docs/jiwa-kombucha/ →



Jiwa On Tap: how it was done

PROBLEM

Bottles are expensive

Every 250 ml bottle carries glass, a cap, a label and a fight for fridge space.

INSIGHT

Breweries solved this

Kegs and taps: one keg replaces dozens of bottles, poured fresh.

MY ANSWER

A tap built on a freezer

A dispenser around a stock chest freezer, buildable and repairable anywhere in India.

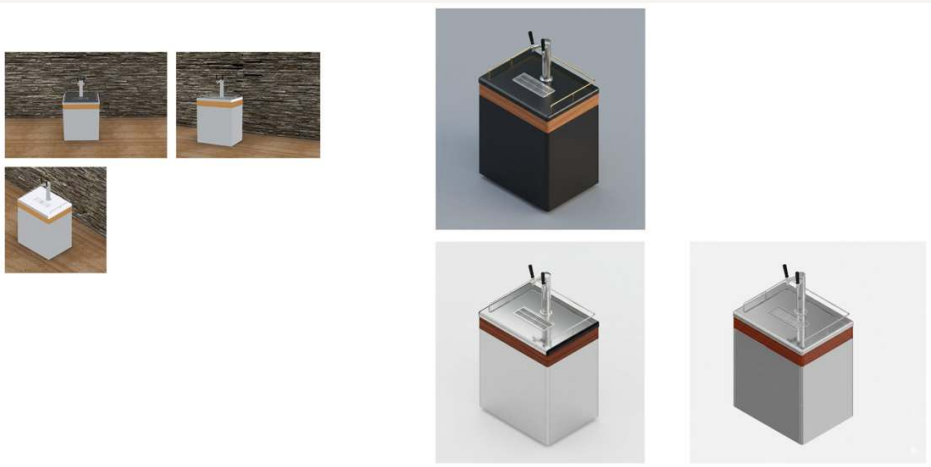
RESULT

Pouring at a café

Built, branded and installed; the frame was reused for a second brand.



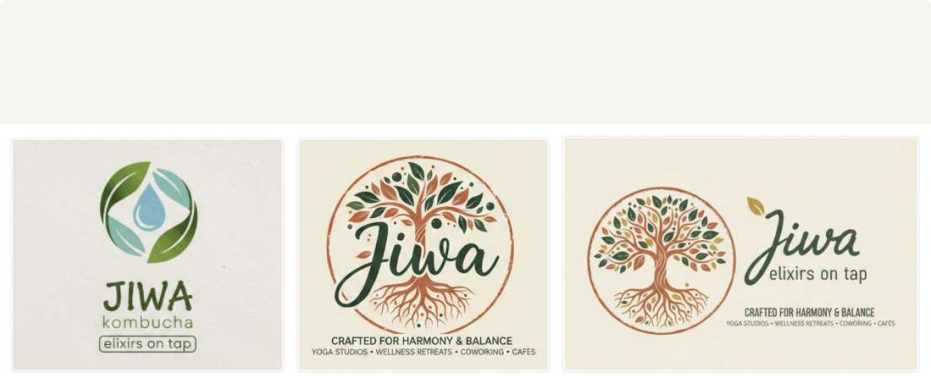
01 Kegs and CO2 go inside a stock chest freezer



02 Form and finish studies



03 Built: timber top, drip tray, two taps



04 The Jiwa brand

PRODUCT DESIGN · MECHANISM

Adjustable Pivot Scissors

One pair of scissors that becomes small snips, everyday scissors or large shears by moving the pivot along the blades.

3 sizes in one pair: detail, everyday, shear	**7** pivot positions on each blade
2 mm stainless sheet, designed flat	**5** fasteners in the whole tool

Methods Observation, lever research, sketching
Tools SolidWorks, 3D printing (PLA), rendering



Full case study: ryansehgal.com/docs/scissors/ →

Adjustable Pivot Scissors: how it was done

PROBLEM

The wrong scissors

Big scissors lose control on detail. Small ones hurt on cardboard.

INSIGHT

It is all the pivot

Small, regular and large scissors differ in one thing: where the pivot sits.

MY ANSWER

Let the pivot move

A row of holes on each blade, with handles that slide to follow the pivot.

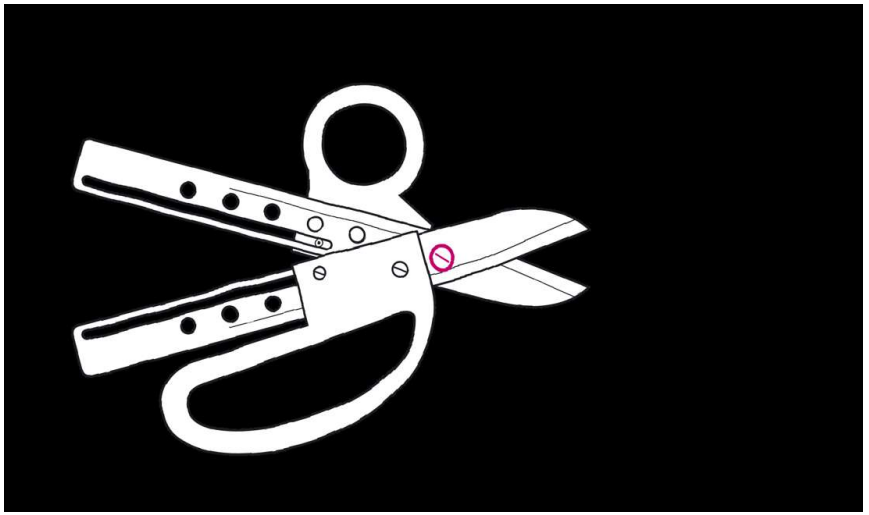
RESULT

Three tools in one

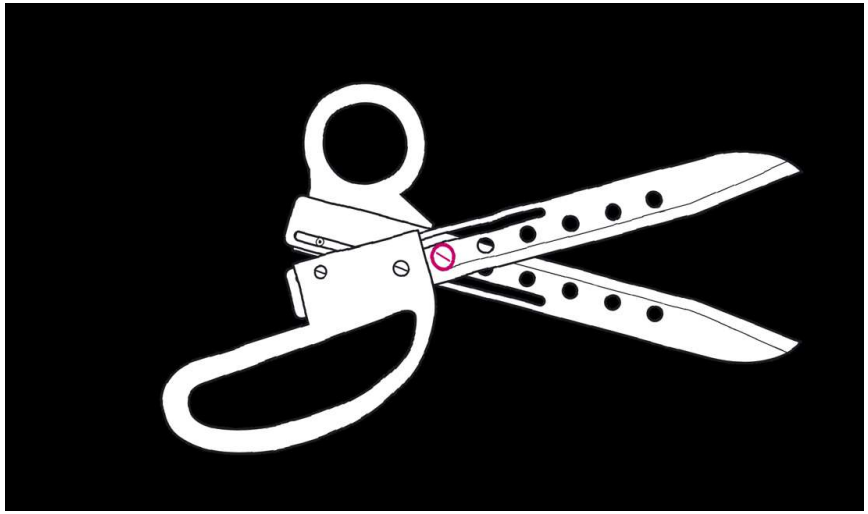
Proven in a full-scale print and designed in brushed steel.



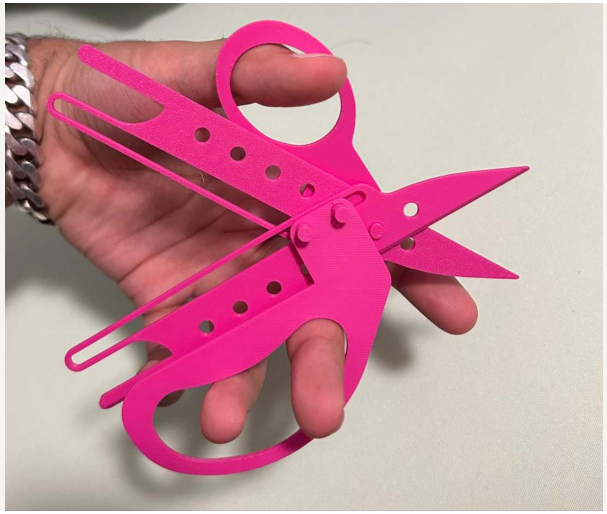
01 The problem: a bag of scissors for every job



02 Pivot forward: short blades for detail



03 Pivot back: long blades for long cuts



04 Full-scale prototype in the hand

DESIGN INTERNSHIP · COCO LENI EYEWEAR, GOA · JUN–JUL 2025

Coco Leni Eyewear

A sunglass frame with no logo on it, so the shape does the branding. I took it from CAD through CAM and G-code to a CNC-milled acetate frame.

Top 3 seller in the brand's line	**0** logos: the silhouette is the brand
3-axis CNC milled from tortoise acetate	**1** company-wide production SOP, still on the floor

Role Frame design, CAD, CAM
Tools Fusion 360, CAM, G-code, 3-axis CNC
Material Tortoise acetate



Full case study: ryansehgal.com/docs/coco-leni/ →

Coco Leni Eyewear: how it was done

PROBLEM

No logo on your face

The brand wanted frames with no logo, so the shape had to carry it.

WHY IT WAS HARD

Designed to be milled

The frame had to be drawn so a 3-axis CNC could cut it from a slab.

MY ANSWER

Flat brow, deep lenses

A strong silhouette, modelled as a solid with hinge seats cut in.

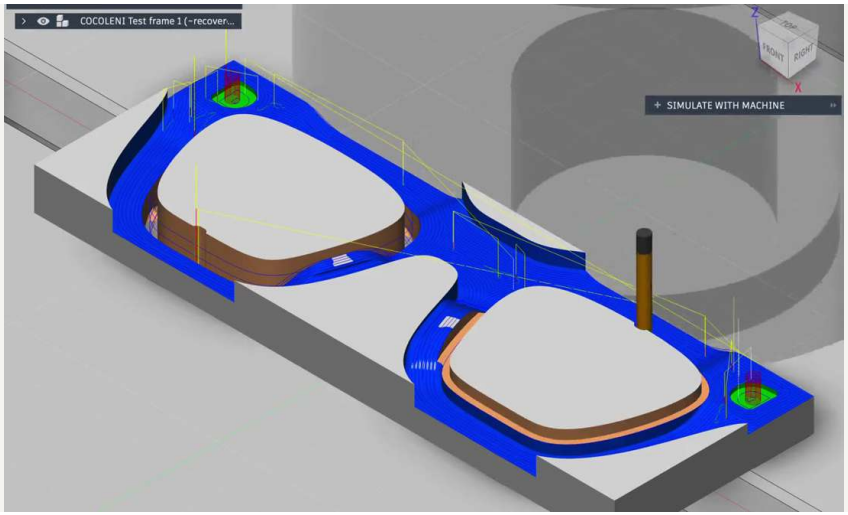
RESULT

A top-3 seller

The Starke frame is now one of the three best sellers in the line.



01 Modelled in Fusion 360



02 Simulated CNC toolpaths



03 Milled out of a slab of acetate



04 The Starke frame, worn

LIGHT STUDY · PROTOTYPE TO FINAL DESIGN · 2025

Beam Light

A small lamp that throws a tight beam using only shape: a foil paraboloid gathers the light and a single lens focuses it.

12 foil facets stand in for the true curve	**2** kinds of light: a warm glow and a hard beam
1 lens at the top focuses the beam	**2** stages: a working prototype, then the final design

Materials Laser cut plywood, foil, wood veneer, lens
Methods Optics sketches, prototyping, rendering

Full case study: ryansehgal.com/docs/focused-light-study/ →



ryansehgal.com/docs/focused-light-study ↗

Beam Light: how it was done

QUESTION

Can shape alone aim light?

A bare bulb sends light everywhere. I wanted to gather it into one direction.

WHY IT WAS HARD

Curves are hard by hand

A paraboloid reflector is difficult to make from flat material.

MY ANSWER

Ribs, foil and a lens

Laser cut ribs hold foil facets in a parabola; a lens tightens the beam.

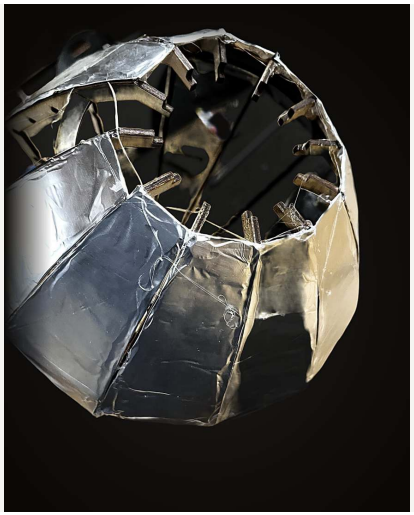
RESULT

A visible beam

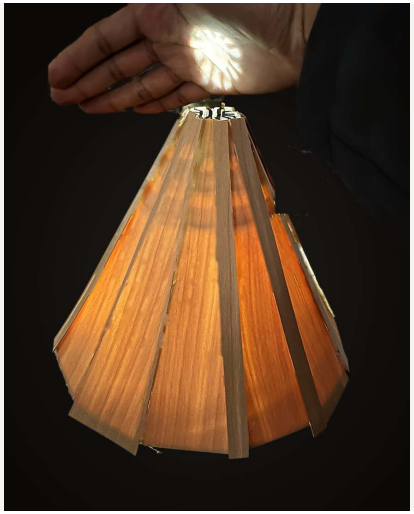
The prototype throws a solid column of light, so the final design kept its geometry.



01 Laser-cut ribs



02 Foil facets



03 The prototype works

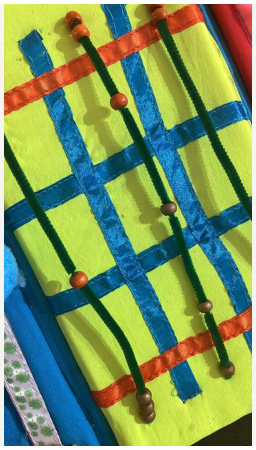


04 Final design

FOUNDER + PRODUCT DESIGN · INTERACT KIT, DELHI · 2022–2024

Interact Kit

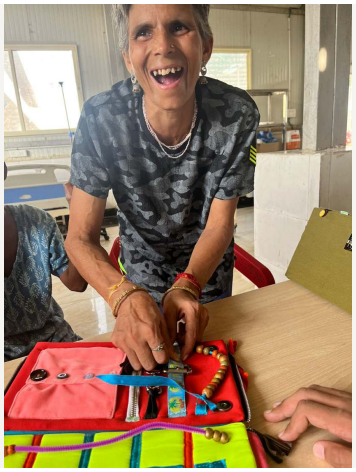
A fold-out kit of buttons, zips, beads and laces for older adults living with anxiety and reduced motor control. Tested in workshops at eldercare homes, endorsed by 3 health professionals, rated 4.5 out of 5 by users, 100+ kits sold.



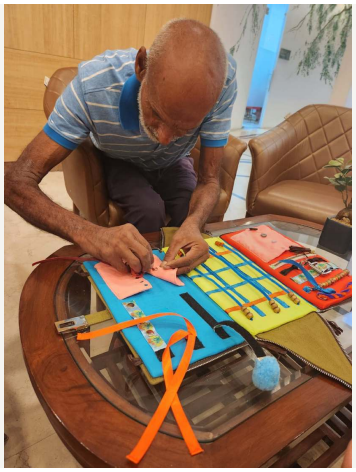
Buttons, straps and beads to work by hand



Folds into a case to carry



Workshop at Earth Saviours



Workshop at Aurum Senior Living

Full case study: ryansehgal.com/docs/interact-kit/ →



METAL SHOP

Modular Connections

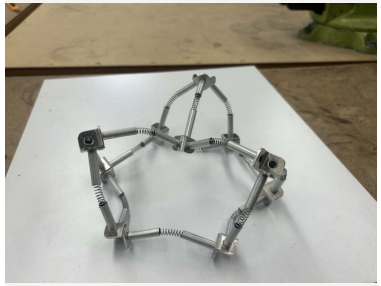
Aluminum tube joints linked by springs and cube nodes, built up from a single joint into a larger structure, plus Metal Nesting, folded sheet-metal forms.



One joint



Building it up



The larger structure



Metal Nesting

Full case study: ryansehgal.com/docs/metal/ →



ryansehgal.com/docs/metal ↗

APPAREL · RISD, FASHION@BROWN AND THE FACTORY

Apparel

A paneled top taken through two iterations, 2 pieces of a 4-piece collection shown at the Fashion@Brown × Vogue runway, and time on a garment factory floor.



First iteration



Paper patterns



Second iteration



The factory floor

Full case study: ryansehgal.com/docs/apparel/ →



ryansehgal.com/docs/apparel ↗

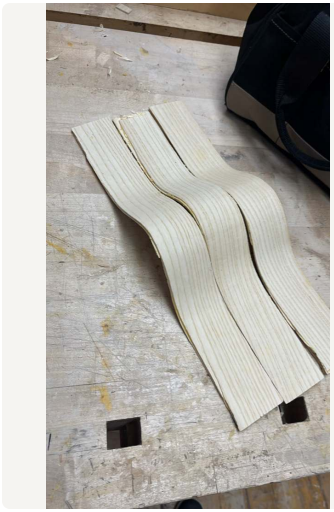
WOOD SHOP

Wood Disk with Stand

A dark wooden disk shaped and finished by hand, held in a stand of bent-laminated strips that wave around it.



Finishing the disk



Bent laminations



Glue-up



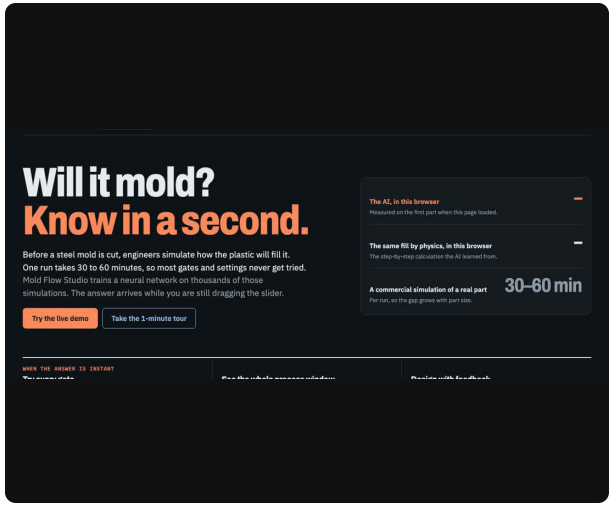
Final

Full case study: ryansehgal.com/docs/wood-disk/ →



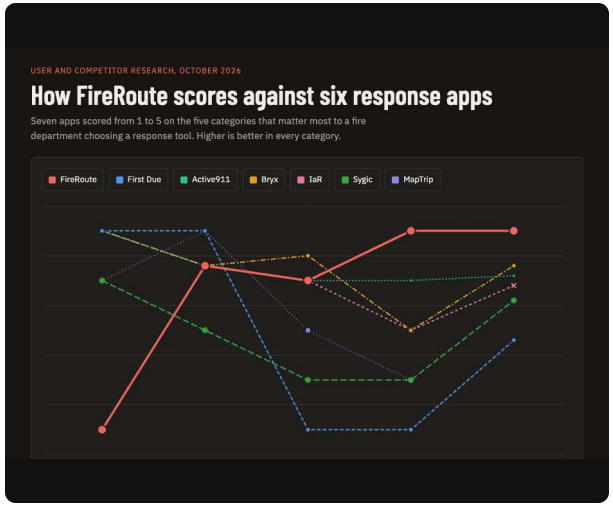
Software I built

LIVE AT RYANSEHGAL.COM



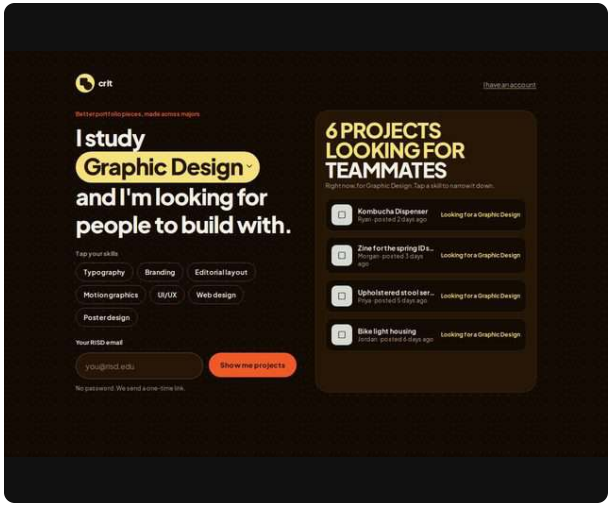
Mold Flow Studio ↗

An AI mold-fill predictor: a neural network trained on 24,000 simulations predicts how plastic fills a mold in under a second (~4% error, 89% of short shots caught), with a physics simulation beside it as a check.



FireRoute ↗

GPS routing built for fire apparatus, not passenger cars: truck-aware routes, turn-by-turn directions in large type for a moving cab, and the nearest hydrants on scene.



Crit ↗

A platform where RISD students share projects and team up across majors.

THANK YOU

Let’s talk.

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ryansehgal.com · every project here has a full, interactive case study

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