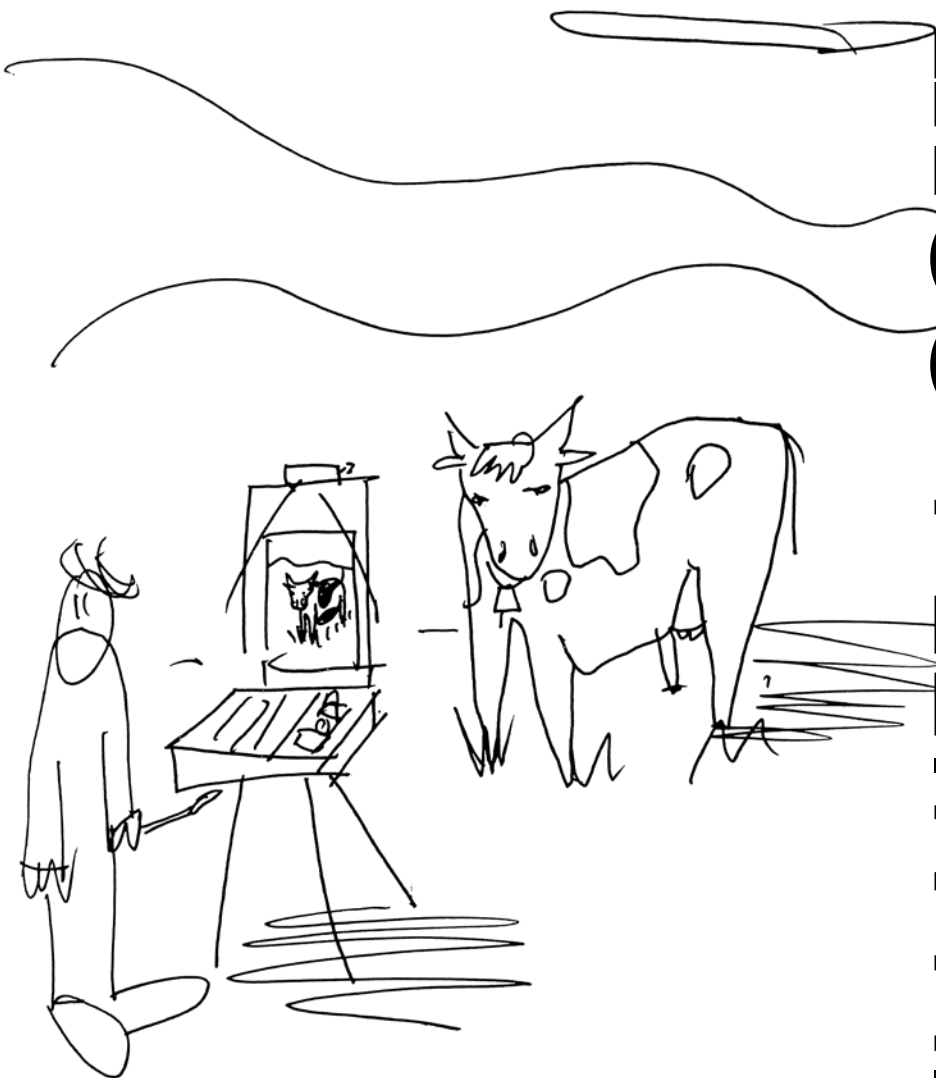


CHRISTO ALLEGRA / EVERYTHING SO FAR / 2022-2023

MARCO PLEIN AIR

S4AD2023
+SFPC



FIRST SKETCH / 10/20/2020

COMPUTER GARDENING

ROBERT FAUGHT
A.B. Kenyon College 1978

Submitted in Partial Fulfillment of
the Requirements for the Degree of
Master of Science
at the
Massachusetts Institute of Technology
June 1980

© Robert Faught 1980

The Author hereby grants to MIT
permission to reproduce and to
distribute publicly copies of this
thesis document in whole or in part.

Signature of Author
Department of Architecture, June 16, 1980

Certified by
Muriel Cooper
Associate Professor of Visual Studies
Thesis Supervisor

Accepted by
Nicholas Negroponte
Chairman
Departmental Committee for Graduate Students

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
SEP 25 1980

LIBRARIES

3.6 PROBLEMS

It was assumed that the power of the
computer as an extendable, interactive tool
would overcome the untactile and
unsatisfying nature of the design of sculptural
shapes on a two dimensional display. The
goal of this project was not to eliminate
those negative aspects caused by this distancing,
but to provide other capabilities that would
minimize their importance. In the current
primitive state of the system, they still
loom large.

This MIT Media Lab paper from 1980 has nothing to do with gardening with computers which would be cool to read about—Whole Earth Catalog and all. Still...

This part is self-aware enough (even then) to describe the magician's wave that media art oft engages in to assert its power over the future. We should work against that IMHO.

THE TRUE STATE OF THE CASE

IN CONSIDERING ANY NEW SUBJECT,
THERE IS FREQUENTLY A TENDENCY,

FIRST, TO OVERRATE WHAT WE FIND TO BE
ALREADY INTERESTING OR REMARKABLE;

AND, SECONDLY, BY A SORT OF NATURAL REACTION,
TO UNDERVALUE THE TRUE STATE OF THE CASE
WHEN WE DO DISCOVER THAT OUR NOTIONS HAVE
SURPASSED THOSE THAT WERE REALLY TENABLE

– ADA LOVELACE 1843

The act of painting is a healthy one. It reconciles what is in one's mind with what is in front of oneself through movement of the body. Sometimes I really believe making pictures is a form of visualization magic.

I have found in media art (and been told by lauded luminaries) that to distinguish oneself you should use the newest new in your work. “You could be known as the artist who innovated ‘the laser’ in art!” To some that sounds exciting but for me it's exhausting, hollow and expensive. I find that chasing the newest new in whatever mode — tech, social, cultural, educational, etc. — feels like a distraction from a healthy art practice and (worse) might leave me in a creative double bind.

MARCO and programmatic painting came out of the process of teaching myself to paint, at a later age, with no academy teaching, a couple of books and decades of design experience and okay creative coding skills.

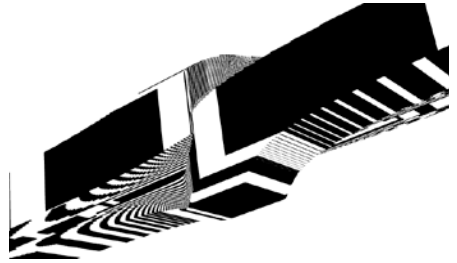
Over time I realized how much I already had working for me. As cool and popular as plotters and expensive robot arms are, I'd rather use my own arms. The feedback loop is created when the brush hits the canvas loaded with pigment and it realizes a sinuous line made by rolling the handle between one's fingertips. Intelligence becomes tactile. Senses interpret as knowledge, written on this body.

Plein Air painting is another step in developing my art and finding methods that integrate practices. Deep in the woods, tired from a long hike, mangling colors together to try and name the unnameable, learning something new for the next time, while tweaking my code as swamp bugs hover — all challenge my own notions of what it means to be an artist.

What I've learned from this: go outside, get out of stale environments or headspaces, get off social media, meditate, nap, whatever you need. Remember, your studio can be anywhere. Squeeze reality through your art, and find you will be renewed through your effort to see with fresh eyes.

UNTIL NOW

2006 Began writing Processing programs to project and paint but was unsatisfied with the tracing method.



2008 Showed “Morphogenesis” @ UCLA: 100 drawings of 1,000 lines each traced from a ϕ algorithm and then given away.

YEARS PASS

Focused on poetic data visualization.

2014 At SFPC, while reviewing a programmatic painting sketch, Zach suggested, “There should be knobs.”



2015 Explored the Warhol technique of underpainting in color then transferring a black overprint.

2016 Wrote a program to load images into data and paint them — first with other images, then digitized marks.

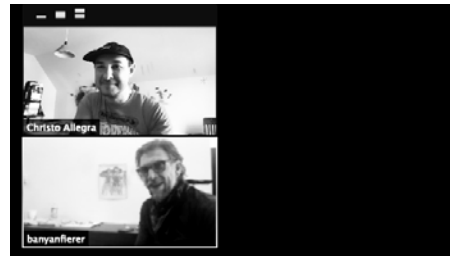
2017 Projected the program's outputs and began tuning it to help with drawing and painting in physical media.



2018 Made hundreds of pictures in a variety of mediums with this new technique to find its extent and interaction model.

2019 Continued making pictures and coding new methods, including depth data and a physical controller.

2020 Presented at SFPC's 7 year show; COVID; Zoom painted with Banyan Fierer; wrote a book about MARCO.

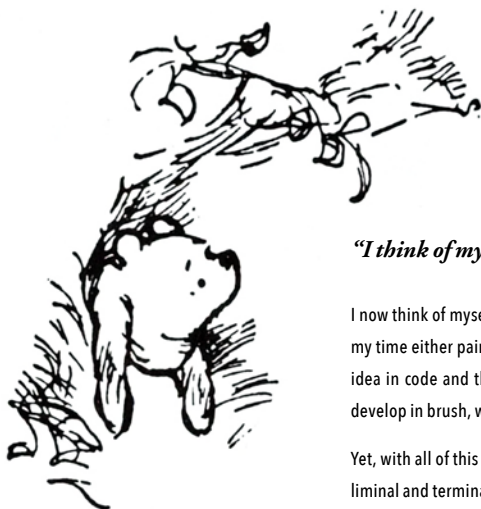


2021 Re-factored the codebase, added an audio reactive mode, and refined the software and projection setups.

2022 Shared code on-line, held studio visits for feedback, and increased the physical scale of drawings and paintings.

2023 Explored dimension methods and built a minaturized battery-operated Plein Air version.





GETTING UNSTUCK

“I think of myself as a painter who writes music.” — Joni Mitchell

I now think of myself as a painter who writes code. Over the last 8 years, I've spent most of my time either painting to understand how to enact my findings in code, or developing an idea in code and then spending the time experimenting to see a programmatic strategy develop in brush, with medium, on a surface.

Yet, with all of this exciting back and forth I was still stuck on the screen in a room. It was a liminal and terminal point and I needed to squeeze out.

NEW & OLD

The first change I needed was a different mix of the new and old. This project is fundamentally about fusing historic and contemporary methods of picture-making to honor the past while looking towards a humane future. It is fascinating to surf the archaeology of art-making objects and look to how they precede our new and improved ahistoric techno-utopian inventions. How does their refiguration open up creative possibilities?

STUDIO ZOMBIE

At times the studio is an extraordinary, healthy space for the imagination and making. Still the lonely grind, 14 hour days and iterative back and forth between computer screen and canvas can become a black hole of repetitive action. If your escape then is the rectangular black hole of a computer or phone screen, the isolation is depressing no matter how great you feel about the work. Getting outside into the fresh air, with vistas, new constraints, and passersby is superlatively invigorating.

COLORS

Digital color is pretty bad. CMYK color is too cool and flat; RGB is blown out. Neither engage with luminosity, dimension, light, time, vibration and other deep material qualities. The quality of outputs are dependent on the cost of your projector or printer. Getting out into the cosmic, visible spectrum is energetic, intellectually challenging, and bright while mixing colors in situ is a far superior experience.

INTEGRATION

1st time out—I loaded up my backpack and plein air box after meticulously imagining my needs for an afternoon of painting in the woods. The pack was heavy and I felt the weight of all my tech, paints, tools and materials sitting on my frame as I made my hike a mile or two to my intended spot. Huffing, puffing and feeling the physical strain got me to realize that this too was another part of my practice to integrate — art is a platform that is durable and strong.

CONFLUENCES

WAY BACK WHEN

1200

1300

1400

1500

Paint
350,000 BP

Camera Obscura
7000 BP

Glasses
1268

Grids
100,000 BP

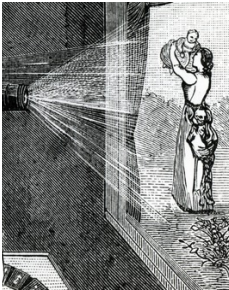
Perspective
1415



Egyptian Grids



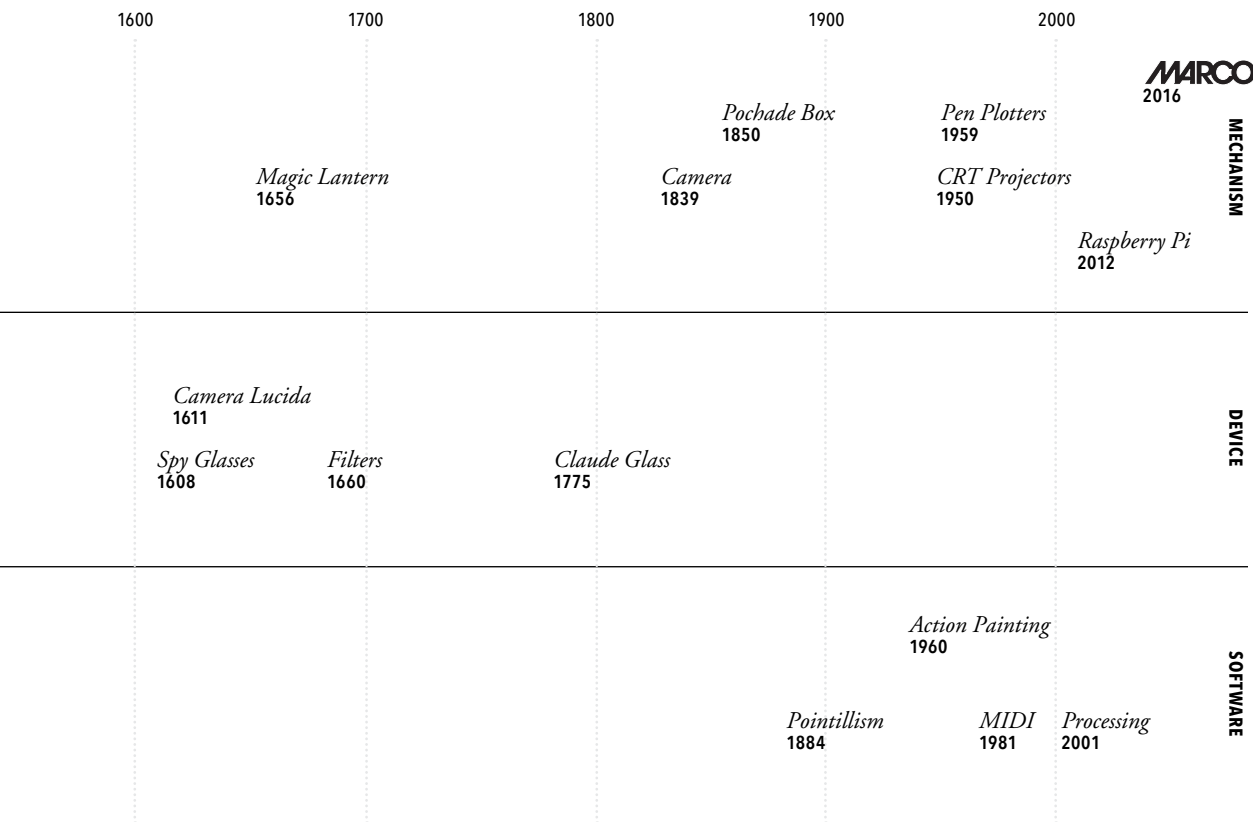
Chinese Sunglasses



Magic Lantern



Raspberry Pi



Context

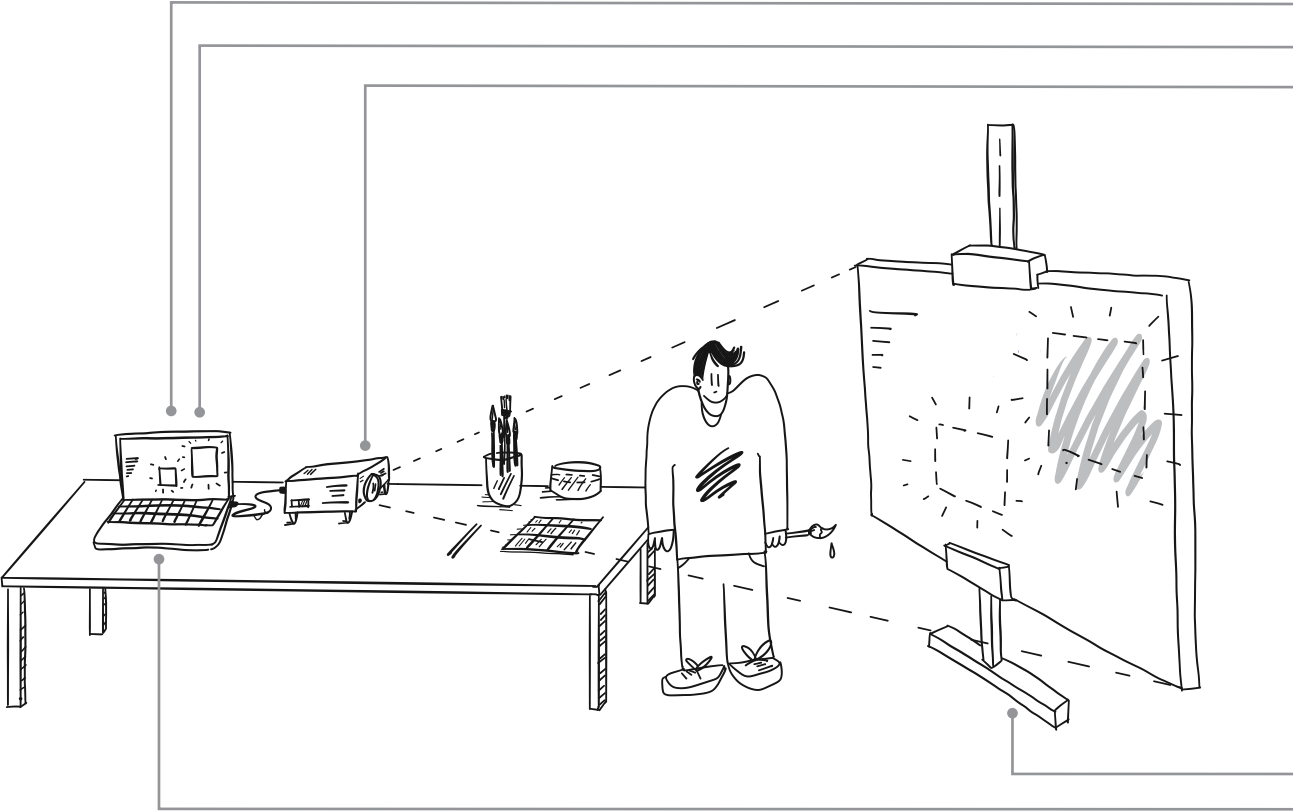
For every History there is an equal and opposite history in every dimension — or something...

This is by no means an attempt at an accurate, comprehensive historical view of art innovation & invention. As an artist, I know in my heart that we have already forgotten all that we will discover and the greatest inventions and ideas are unlikely to be part of any record that remains.

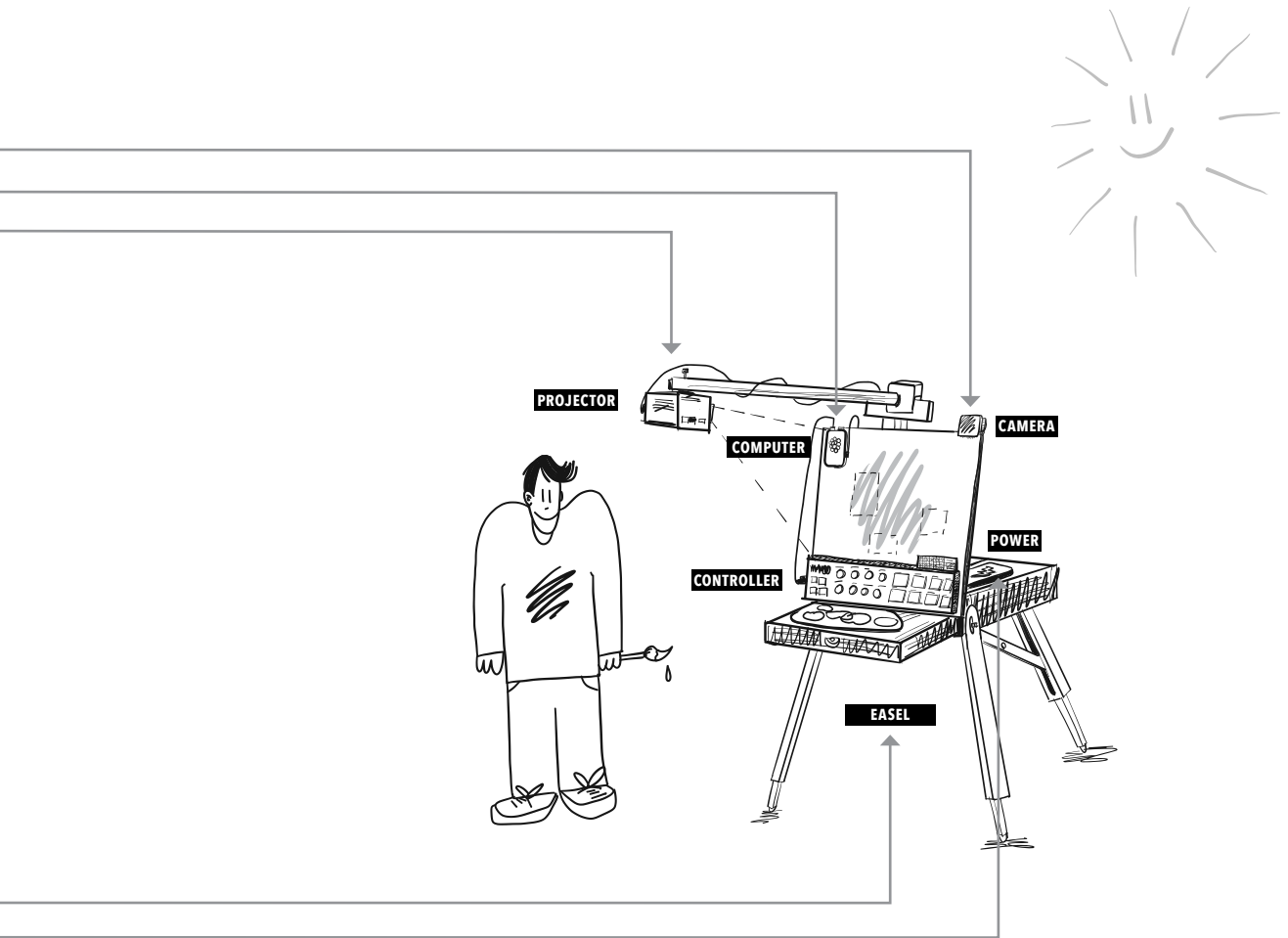
Instead I would refer to this as ‘things that inspired me and may be interesting to you’ if you are trying to see the millennia-length skidmarks that arrive at the current intersection of art and technology.

Please — do not wait for the light to change. Just step on it, and go in any direction but here.

FROM STUDIO



TO FIELD EASEL



VINALHAVEN / PLEIN AIR

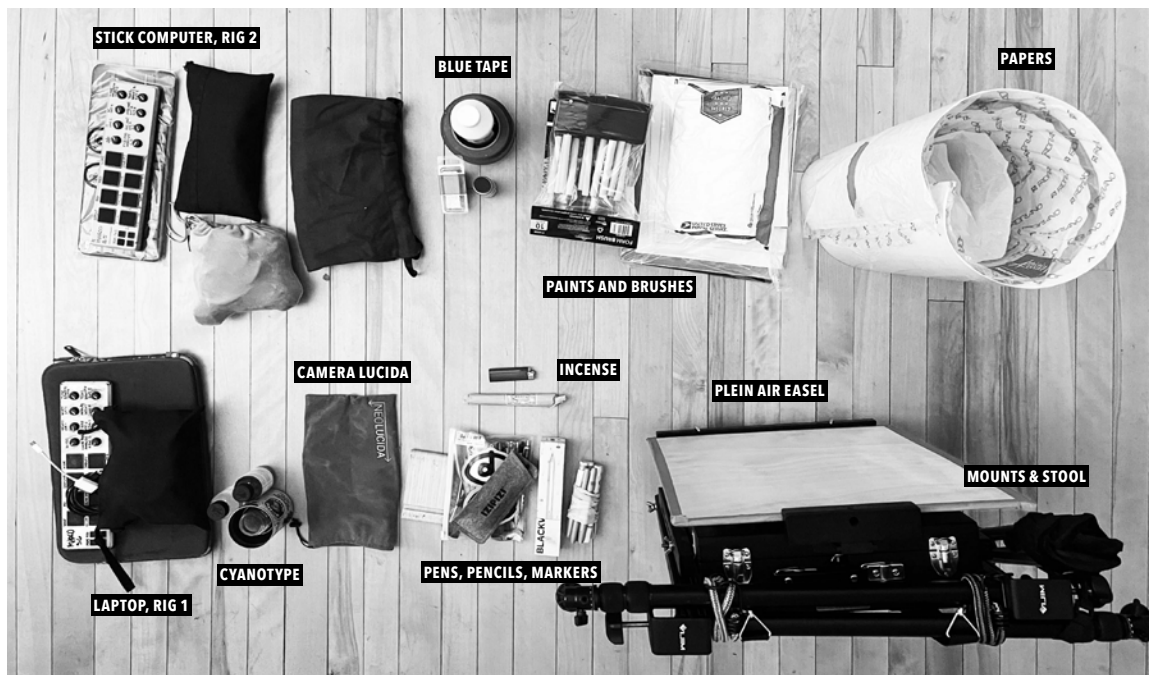


DESIGN INQUIRY

The last week of June 2023, I joined a creative residency in Vinalhaven, ME with other artists, writers, and designers. “Around/Work” was the framing topic and it was useful to think about whether my art is work or rest.

I realized that week that making art has been my rest for 30 years — the counterpoint to my design/work practice. Now it’s time to flip that dynamic. Work harder to express, and tune out the rest. Thanks DI.

[HTTPS://AROUNDWORK.DESIGNINQUIRY.NET/](https://aroundwork.designinquiry.net/)



DISCOVERY

I must have repacked 5 or 6 times the night before I was to head to Rockland, Maine to catch the ferry to Vinalhaven. For the short but intense week ahead I had multiple MARCO setups, a variety of mediums, surfaces and tools — I even brought a NeoLucida. My primary goal (two years in the making) was to be able to assemble MARCO on a classic Julian field easel and see how it worked out in the wild. The setting of briny cove with thick woods, marsh trails, shifting skies and late blooming lilacs couldn't have been better to test and prove the method's merit while inspiring my heart to continue on this path.

- *With a mix of traditional plein air painting tools and a miniaturized battery operated MARCO, I was able to test and tune the concept rig.*
- *Cost accessibility is important to me, so for budget and philosophical reasons I've stayed with off-the-shelf consumer products and they've held up over many uses through the mud, rain and sun.*
- *Reducing the footprint of this rig is on-going work. Finding that balance between the essential and expansive requires iterations in a range of settings. The quality of the resulting artwork sets my course.*



A dry run in the Sparrow Farm barn helped me tune the setup, add camera support, adjust wiring and finalize my selection of tools and paints.

PLEIN AIR / DAY 1

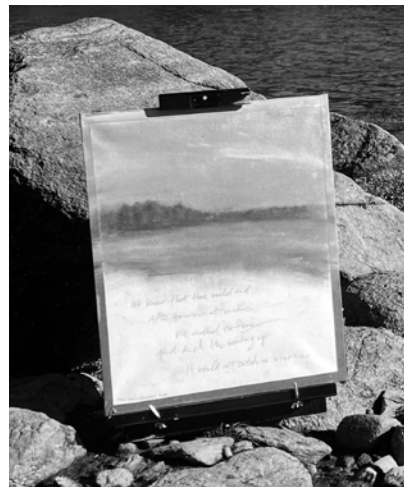


The day started early with a ring-necked pheasant swooping over the field as I set up for the first time. After all of my dry runs in the studio it was a snap, though it became evident that the lumens of the projector was no match for the rising sun.

- *Finding the right place became a big part of the first day, with shade for the projector's light and me and a view that made for an interesting picture.*
- *Everything was really heavy to carry — a backpack full of materials, a plein air box loaded up with tech, a laptop, and a fanny pack with a projector and cables was too much. It needed to be pared down and simplified.*



TWO TREES LOOKING OUT
Pastels on watercolor paper



WORLD ENDS
Oil paints on canvas paper

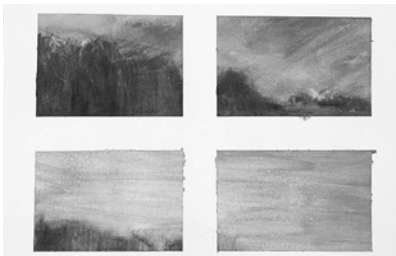
We knew the world would end After tomorrow at sunrise We scrubbed the floors And did the washing up It would not catch us unawares. —Derek Jarman, Blue

PLEIN AIR / DAY 2



POSTCARDS FROM THE POND

Looking back at the hot barn where I had been painting for the earlier part of the week while the birds soared, the windswells chanted and the sun bounced hot on my face, I knew I was where I was meant to be – learning new lessons in nature.



After cutting apart the picture into postcard sized pictures, I added a stamp and the text, "Dear Universe," and shared them with the other DesignInquiry attendees. The idea was to write and mail a message that one would receive from their time at Vinalhaven.

Lessons learned from the previous day, I stripped down to a lighter set of media: water soluble crayons and brushes working on watercolor paper subdivided by tape to be cut into postcard sized pictures. I found a spot by a tree for shade and began working while the colors and skies shifted.

- *I already knew a fast drying medium worked best with the frenetic pace and energy I preferred with MARCO, but in plein air it became clear that preparation for speedy execution of a picture was another factor. Batteries die, scenes change, so maximizing the value of the time spent in situ was key.*
- *The first picture made was tight and controlled, the second much looser and energetic. It was a reminder to do a warm-up picture first, then move on to the next, even outside.*





MT GREYLOCK

AUGUST 17TH, 2023

SETUP



On Vinalhaven, I was lugging my laptop which was heavy and I knew it was just a matter of time before I dropped it in the mud. In the following weeks, I ported MARCO to a Raspberry PI and added a cheap camera. Fitting everything into the box and reducing the setup by a couple of pounds made a big difference. I strapped everything to a repurposed hiking pack and was set to go.

- HIKING PACK
- PLEIN AIR BOX
- RASP_PI
- TVEYE

MEDIUMS



Experimenting with gouache's quick drying and opaque nature had it as a top contender for MARCO Plein Air. The downside was the chalky flatness of the medium but the vibrant colors made up for it. After making several gouache pictures, I started in on an oil which began to get muddy quickly. Later I found out my brushes were all wrong for plein air: stiff bristles to the rescue.

- GOUACHE
- OILS

DISCOVERY

- *Kids are sweet and encouraging to artists, and it's nice when you are feeling stressed.*
- *How fast is your medium? Gouache, oil, mixing, prepping in advance is key to plein air.*
- *Who knows what conditions will be, but see what you see and make a picture anyways.*

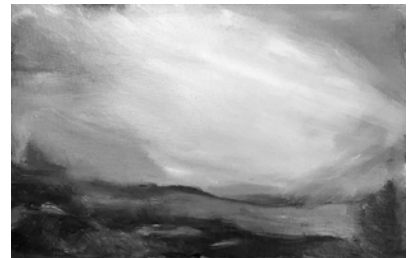


GREYLOCK IN A CLOUD

There is something wonderful about arriving at place with an expectation and having it confounded. The idea was to paint the vista from the top of Mt. Greylock, but as the car climbed the switchbacks it became clear that I would be painting the inside of a cloud.

As I explored the various paths that circle the mountain top for a “good spot”, the thick fog finally had me setting up my easel on the edge... of something, who knows what. Depth, distance, light source, even color was indeterminate. As I pointed the camera about to capture the scene, there was a clear value in using its indiscriminate eye. In the same way that the MARCO algorithm de-subjectifies painting, the camera de-framed the picture and required me to reconsider what was at hand.

- *As I was painting, a group of kids hiked up around me and looked at what I was painting. I conveyed my frustration with the foggy subject, to which she replied, “But that’s what makes artists so great — they can find the beauty in anything. Someday I will be an artist too.” This wisdom from a 12 year old lit up my heart. I hope she realizes her vision for her future.*



In oils, I quickly built a base layer with a thinned out tone then pressed paint into canvas. In no time it was muddy and overworked. While oil paints (and pastels) work well with MARCO, layering oils quickly in plein air does not. I’ve learned that lesson (on Youtube) and now take a different approach with a pre-mixed palette, stiff bristles, and lots of clean brushes for blending. Much better.

QUEBEC CITY

SEPTEMBER 4TH, 2023

SETUP



Walking around a new, hilly city with my rig had me sweating and quickly exhausted. After my first session I completely emptied out my box of any non-essential items. Like outdoor enthusiasts who measure their gear down to the gram, it became clear that my range and endurance are dependent on the ratio of need and weight.

- HIKING PACK
- PLEIN AIR BOX
- RASP_PI
- TVEYE

MEDIUMS



Water brushes are great. While at first they felt unsatisfyingly plastic, over time I realized they made expressive marks in an efficient form factor. Don't be turned off by the nylon bristles: they do a remarkable job and the water in the barrel gives them a unique efficiency.

- GOUACHE
- WATERCOLORS

DISCOVERY

- *Making art in public creates conversations that sometimes leave you with another's wisdom.*
- *Up and down hills, every bit of weight counts.*
- *People might want to buy your work right there.*
- *As you abstract your process, learn things in the field that keep it real and fresh.*



FOUR FRONTENAC

The stately Chateau Frontenac is a great subject with its lines, turrets and hefty volumes.

Before visiting QC I added a new feature to MARCO that would multiply the image projected, so that I could simultaneously paint several of the same images at a time — the advantage being that I could experiment in the same moment with different studies of the same object in place. The variations in each version help me consider my strategies and choices in an abstracted way.

- *There is something about being the artist in public that creates an intimacy with passersby. Fortunately, it is generally encouraging and supportive. My favorite interaction was with an elderly gent on the street who remarked, “The key to a good painting is that it is perpetually unfinished to the eye.” I like that.*
- *I can’t recommend Quebec City enough. QC is lovely and filled with the nicest French-speaking folks I’ve ever met.*



The city is a natural environment for MARCO drawing and painting. The rectilinearity and perspective of the streets and their architecture work well with the program’s controls for block and lines.

BRATTLEBORO, VERMONT

OCTOBER 27TH, 2023

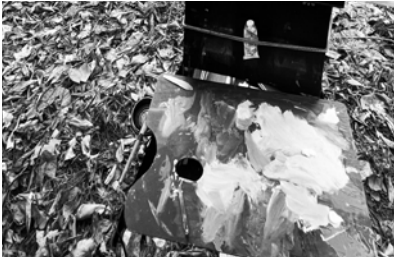
SETUP



The Retreat Trails in Brattleboro, Vermont have been my backyard for years. I've explored them on hikes, runs, bikes, and skis. Taking my art-making system out into them was profoundly impactful. This exercise helped me to realize the integrity, durability and elasticity of a developed art practice. It contains amplitudes.

- HIKING PACK
- PLEIN AIR BOX
- RASP_PI
- TVEYE

MEDIUMS



After getting some new bristles in my box and deciding to try a different tack with mixing my colors, oils began doing what they do well: bringing rich color in place with the ability to blend. Paint and brushes have so many secrets to their ancient picture-making technology.

- OILS
- CHARCOALS

DISCOVERY

- *Getting into the woods with a pack and then painting is integrative and good for mind, body and soul.*
- *Prep your medium before the brush hits the canvas and you will make fresher paintings.*
- *Conserve your juice.*



MT. WANTASTIQUE IN AUTUMN DRESS

Oil on canvas, 24x36"

It seems that the more I learn, the more I prep. The preparation comes when packing up my Plein Air rig. What will I need when I'm out there? what do I not need? is everything charged? do I have enough paper or canvas? is there anything learned from the last time out that I should account for? And on and on. All of this planning does have the benefit of maximixing your time and effort while out painting somewhere far from the cable that you forgot to pack.

I've also noticed that I am taking more time post-rig-setup to really think through my approach for a picture. Key to this is to not do that while also burning through your battery. Stage your work for the best usage of your resources in service of the best picture, and then reserve the right to change direction mid-stream.



My pictures seem to look for a place between abstraction and representation. I am using photographic data but my mark-making strategies are designed to foil the trap of tracing and its stale results. Putting energy into a picture in order to excite the eye with rhythm and vibration is my goal for now.

NOTES TO MYSELF

- *Painting is really hard; don't underestimate it.*
- *Seven years ago programmatic painting became my primary project. Realize the value of working on one project for as long as you can. It will show you many directions over time.*
- *Fall in love with your art over and over again*
- *Color will require multiple lives to comprehend.*
- *Your studio can be anywhere. Go someplace that makes you feel like yourself and see how long you can stay there.*
- *Integrate as much as you can into your art to see yourself in your art: whole, healthy, happy.*
- *What/Who/When are you waiting for?*



WHAT'S NEXT

CURRENT BUILD

MARCO Plein Air runs in Processing on a Raspberry Pi 3. I will move it to a RP4 for better resources and stability. It also could use a nicer camera, though my \$6 cheapo is surprisingly good.

FEATURES

Most of the features of MARCO Plein Air are in the hardware. Upgrades could be deeper integration of the plein air easel and the electronics for a faster setup time.

ISSUES

Battery life is OK for the projector, 1.5 hours. That could be resolved but I just treat that as the time to stop using MARCO and just paint. The whole package is also heavier than I would like.

UPGRADES

Some picture features like zooming or panning could be useful but for the most part there are no major new needs that MARCO Plein Air introduced. Let me know if you have any ideas.

INTERESTED?

MARCO is open source software and I share builds of my code. I am not productizing MARCO into releases and upgrade paths across multiple platforms. That said I am happy to demo it and help folks get started with it.

PLEIN AIR TURBO

To continue the theme of integration, I think that building a mount on my easel that allows me to attach it to a bike would be deeply satisfying and give me a different range of pictures.



ABOUT CHRISTO ALLEGRA

I am an information designer and media artist and I have been making information-based art for the last 30 years. I became engaged with the medium after completing my undergraduate in Writing Seminars at Johns Hopkins while minoring in computer science. Post graduation in 1996, I launched clique.org which was recognized by early net artists for its experimental work with narrative, text, image and sound. Since my first Apple][e, code has been a method of exploration for interactive media, information design, and graphic language. Subjects have included queer politics, WTC, financial data, visualization, and physicalized narrative. In May 2010, I completed my MFA from UCLA D|MA where my graduate work concentrated on automated data-driven spaces for performance. My work connects detritus and the ephemeral, as represented by the mundane object and information systems. I write software and drive physical environments with the Processing framework and other creative coding platforms. Juxtaposition, collage, cut-up, and conflation are methods that I use to construct intersection points and map meaning. Intersecting seemingly disparate spectrums creates expressive possibility that can be mechanized for iterative representational effect. The aesthetic pursuit is ex-formational experiences (as defined by Kenya Hara and demonstrated by Felix Gonzalez-Torres) that teeter towards the sublime even as they circumscribe their own linguistic boundaries.

I am a painter.



Much appreciation still to Steve Anderson for taking this picture. Thank you Steve Bowden for connecting me with DesignInquiry. I am grateful



I AM HERE

for that time and space. And thank you to my husband Mark Genszler for you support, love and editing skills — I love you.

MARCO
PLEIN
AIR



CHRISTO
ALEGRA

347891.3636

eschatological
research
services

VH-DI 123

ROSEBET 7
23

RA53PI+VI