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Chapter 1 : Chapter The Wrong Way to Draw a Circle - Generative Art [Book]

Generative art is the meeting place between the two; it's the discipline of taking strict, cold, logical processes and subverting them into creating illogical, unpredictable, and expressive results.

Dice were used to select musical sequences from a numbered pool of previously composed phrases. This system provided a balance of order and disorder. The structure was based on an element of order on one hand, and disorder on the other. Bach could be considered generative, in that there is a strict underlying process that is followed by the composer. He also created works on paper that he then cut into strips or squares and reassembled using chance operations to determine placement. In other works he has used chance operations to determine the coloration of grids. Video feedback is now cited as an example of deterministic chaos, and the early explorations by the Vasulkas anticipated contemporary science by many years. Software systems exploiting evolutionary computing to create visual form include those created by Scott Draves and Karl Sims. The digital artist Joseph Nechvatal has exploited models of viral contagion. Michael Noll , of Bell Telephone Laboratories, Incorporated, programmed computer art using mathematical equations and programmed randomness, starting in The Calmoduline Monument project is based on the property of a protein, calmodulin , to bond selectively to calcium. Exterior physical constraints wind, rain, etc. However, the calcium controls the expression of the calmoduline gene. Martin Wattenberg pushed this theme further, transforming "data sets" as diverse as musical scores in "Shape of Song", and Wikipedia edits History Flow , , with Fernanda Viegas into dramatic visual compositions. Using computer algorithms as "brush strokes," Base creates sophisticated imagery that evolves over time to produce a fluid, never-repeating artwork. Software Art For some artists, graphic user interfaces and computer code have become an independent art form in themselves. Adrian Ward created Auto-Illustrator as a commentary on software and generative methods applied to art and design. Jackson Mac Low produced computer-assisted poetry and used algorithms to generate texts; Philip M. Parker has written software to automatically generate entire books. Jason Nelson used generative methods with Speech-to-Text software to create a series of digital poems from movies, television and other audio sources. As with many examples of software art , because live coding emphasises human authorship rather than autonomy, it may be considered in opposition to generative art. In this view both highly ordered and highly disordered generative art can be viewed as simple. Highly ordered generative art minimizes entropy and allows maximal data compression , and highly disordered generative art maximizes entropy and disallows significant data compression. Maximally complex generative art blends order and disorder in a manner similar to biological life, and indeed biologically inspired methods are most frequently used to create complex generative art. This view is at odds with the earlier information theory influenced views of Max Bense [38] and Abraham Moles [39] where complexity in art increases with disorder. Galanter notes further that given the use of visual symmetry, pattern, and repetition by the most ancient known cultures generative art is as old as art itself. He also addresses the mistaken equivalence by some that rule-based art is synonymous with generative art. For example, some art is based on constraint rules that disallow the use of certain colors or shapes. Such art is not generative because constraint rules are not constructive, i. They develop a technical vocabulary that includes Ele-art electronic art , C-art computer art , D-art digital art , CA-art computer assisted art , G-art generative art , CG-art computer based generative art , Evo-art evolutionary based art , R-art robotic art , I-art interactive art , CI-art computer based interactive art , and VR-art virtual reality art. Related to machine intelligence - can a machine generate something new, meaningful, surprising and of value: Many generative artworks do not involve digital computers, but what does generative computer art bring that is new? For example, what does the use of randomness say about the place of intentionality in the making of art? How could generative art give rise to artefacts and ideas that are new, surprising and valuable? How can we form a more critical understanding of generative art? For example, can the art world be considered a complex generative system involving many processes outside the direct control of artists, who are agents of production within a stratified global art market.

Chapter 2 : zenbullets - generative art, algorithmic design, creative code

Generative Art presents both the technique and the beauty of algorithmic art. The book includes high-quality examples of generative art, along with the specific programmatic steps author and artist Matt Pearson followed to create each unique piece using the Processing programming language.

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Copyright holders not acknowledged here should contact the author to be acknowledged in future editions of this book. Recognizing also our responsibility to conserve the resources of our planet, Manning books are printed on paper that is at least 15 percent recycled and processed without the use of elemental chlorine. In Theory and Practice 1. A Programming Language for Artists 13 2. Wave Clock 76 Summary 82 65 7 Autonomy 7. Not only do we now take them for granted, we are becoming the cyborg creatures much-prophesied in s millennial theor y but without the neural implants and vir tual reality that so alienated mainstream audiences. Instead, we put smartphones in our pockets and walk out into the world armed with search engines, Wikipedia, social networking services, and advanced mapping services. Without giving it much thought, we have turned into augmented beings existing in a world that is simultaneously real and virtual. This revolution would be impossible without a new understanding of software as cultural artifact. Where we once saw text processors as literal typewriter replacements, we now download and exchange apps as a popular pastime. New design disciplines like interaction design and information visualization are based on the application of computational solutions to design problems, while generative art has become a household term describing artworks articulated as code. A new generation of electronic artists has turned to code as fertile ground for conceptual and formal experimentation, simultaneously providing a pragmatic framework for computational creativity and a theoretical context for the created artwork. The roots of this trend can be traced back to the mids, when creatives began experimenting with HTML, Shockwave, Flash, and Java applets as a creative medium. Predating iPhone and Android by more than a decade, the World Wide Web was the first media platform to deliver computational content, authored using tools aimed at creatives rather than computer scientists. Written by artists for artists and initially intended as teaching tool, Processing is a simplified language built on top of Java, focusing on creative applications like real-time graphics and interactive systems. It eliminates tedious tasks typical to regular programming tools, allowing even novices to get sketching with code quickly. But despite its simplicity, Processing is a powerful 1. Processing is just one of many free development tools intended for artists. Pure Data PD and vvvv are both so-called visual patching tools, popular for video and sound manipulation. NodeBox and Scriptographer are specialized for graphic programming, and systems like Structure Synth and Context Free are based on recursive shape grammars. Although generative art has grown in popularity, it remains somewhat mystical as a practice, the domain of vaguely mathematical magic. How are these works created? How do we sketch in code? The technical aspects of writing code are tricky enough, let alone manipulating algorithms into serving aesthetic principles. Visual thinkers think in terms of logically connected workflows: Coding often involves obscure steps that at first might seem completely disconnected from the aim of producing a visual composition: Code requires identifying logical connections between elements and describing behaviors in terms of rules that might seem unrelated, and beginners tend to find it frustrating when the need for trigonometry invades even the simplest animation. As Matt Pearson writes, generative art is easyâ€”at least, sometimes. Using Processing as his tool of choice, Matt shows how to progress from primitive drawing to more complex topics like interactive animation and simulated phenomena such as cellular automata. But rather than just demonstrating syntax, he describes the creative process involved in designing generative systems, showing how manipulating parameters and tweaking algorithms can result in radically different outcomes. Having grown up with the ZX Spectrum and worked many years as a programmer while also being involved in the arts, Matt is perfectly placed at the intersection of code and creative thinking. In this book, he sets out to provide the reader with a toolbox of recommended practices while simultaneously introducing a deeper cultural context to the work. It should have readers quickly thinking beyond simple code tricks to the more complex ideas that underlie a computational model of form. Marius Watz Marius Watz is an artist working with code as his material, who has shown his work around the world. He is the founder of the Generator. He is currently based in Oslo and New York. I started a computer science degree, but dropped out after about a year and a half. My studies of early s ideas of computing had so repulsed me that I made efforts to stay as far away from computers as I could for the next 10 years. But in adulthood, I discovered a new enthusiasm for computing after stumbling across a simple realization; that computers and computing were not the same thing. Computing is what a stream does as it finds its way downhill toward the ocean. This is why I can say, without contradiction, that while I still find computers boring, I think computing is cool. The only place computers really come into it is in attempting to simulate these computations or creating new ones to rival those of the natural world. Which brings me to the subject in hand: As a jobbing coder, I always dabbled with generative ideas when I could. But this side of the millennium, that movement was gathering pace and becoming more visible, as the tools also became increasingly powerful and accessible. Or ask you to write a book about it. I called it Abandoned Artworks and set myself the task of producing a generative artwork every week, throwing it out there in whatever state I had got it to hence the abandoned before real-life commitments intruded on my playtime. I included the source code, Creative Commons licensed, so anyone could take my abandoned, half-finished works and find some use in them. This strict, self-imposed schedule was a conscious way to force myself to reorder my priorities. I knew that somehow I found time to spend hours reading comic books and watching no end of god-awful movies, yet generative art, something I enjoyed, was the thing I never found the time for. Not only did I find the schedule easy to maintain, my enthusiasm for Processing the tool I had chosen keep growing. The project took me on many diversions, into print and video, and started feeding back into my day job. It was somewhere around the 50 mark that Christina Rudloff at Manning got in touch to discuss the possibility of a book. That project is now complete, as is the book. I wanted to write something more inspiring, something that was about the why as much as the how. Programming art is a different discipline than programming systems, and there should be no right or wrong way to use the powerful tools we have at our disposal. I wanted to get across how coding can be liberating and creative, not just structured and orderly, and accessible to more people than just the techies. Most of all, thanks to my patient wife, Deborah, who somehow still loves me, despite my being a massive nerd. The appreciation of art is entirely subjective, so if I were to declare that there is a right way to go about creating art, I would be in need of a slap. Even better, if one viewer loves the work, we would hope another might hate it. Perhaps the only cardinal sin of art is to be boring. This book is peppered throughout with stills from my own generative works, most of them relating to whatever topic is under discussion, but others are just randomly thrown in as a breather. Source code for many of these images can be downloaded from http: I would hope that even if you hated every single piece of artwork within these pages, you may still get something from the book, if only the inspiration to do something better. In this way, even bad art can be good, as it is only the very worst that can inspire an extreme reaction. To not produce any reaction at all is to fail as an artist. I want to explore how programmers can open themselves to more artistic flurries, a way of freeing the brain to get creative with code. The roadmap for this approach is as follows: Chapter 1 looks at the concept of generative art from a few different angles; then, in chapter 2, we get up to speed with Processing, a simple programming language that will be our main tool for the rest of the book. We begin with the drawing of a line in chapter 3; we see how even this can be spun out into interesting spaces with a more fluid approach, extending the idea to trigonometry with chapter 4. Chapter 5 explores animation and 3D drawing. We maintain a practical approach throughout though, exploring how we might simulate these phenomena in code, and learning, by stealth methods, more advanced object-oriented programming required for these experiments. There is no right or wrong way to be a generative artist. There are no rules or recipes. Generative art is about the organic, the emergent, the beautiful, the imprecise, and the unexpected. This delightful paradoxicality makes it an almost Zen approach to computing: To put it more simply, generative art is about having fun with coding. The programming language can be an artistic tool, capable of making both profound statements and banal ones, if in the right hands. He lives in Brighton UK, where he shares a house with a number of small blonde children, a collection of MacBooks, and probably the most beautiful woman Wolverhampton ever produced. You can find more of his incessant babbling at http: Things which are made, such as houses, furniture, and machines, are an assemblage of parts put together, or shaped, like sculpture, from the outside inwards. But things which grow shape themselves from within outwardsâ€”they are not assemblages of originally distinct parts; they partition themselves, elaborating their own structure from the whole to the parts, from the simple to the complex. He was a master of theology, a priest, and the author of more than 20 books on Zen philosophy. He also experimented with psychedelic drugs, both on a personal level and in laboratory trials. He had plenty to say on the subject of creativity and technology but never, as far as I know, said anything specifically on the subject of generative art. Generative art is neither programming nor art, in their conventional sense. Art is an emotional subject, highly subjective and defying definition. Generative art is about creating the organic using the mechanical. A building has straight edges and sharp corners: On the other hand, organic things are grown: Like the landscape gardener, the lot of the generative artist is to take naturally evolving phenomena and to fashion them into something aesthetically pleasing. The sweet spot is between the two, where the grass is neat and evenly cut but still no two blades are alike or move in perfect synchronicityâ€”where the colors of the flowers are evenly balanced, but not in a way that is exact and precise. Multiple artworks produced by a single algorithm.

Chapter 3 : Generative Art by Matt Pearson

2 Generative Art | Pearson 15 Processing: A Programming Language for Artists Mastery of a programming language is perhaps the single significant barrier of entry to generative.

Chapter 4 : generative art matt pearson PDF, Processing is a flexible software - blog.quintoapp.com

Name: Generative art pearson Art pearson generative pdf. blog.quintoapp.com 13 credits. a curated blog featuring art, photography, architecture, design, and animation from established and emerging artists around the world enter your email address to follow this blog and receive notifications of generative art pearson new posts by email. since , processing has.

Chapter 5 : Pearson Education - Generative Art

Pearson C Generative Art: In Theory and Practice Sample Chapter This chapter available under a Creative Commons (Attribution-NonCommercial) license.

Chapter 6 : Matt Pearson (Author of Generative Art)

8 Generative Art | reflexive iterationâ€"a type that, unchecked, tends toward the infinite. Pearson Fractals Fractals, from the Latin fractus (meaning "broken"), are shapes or patterns that repeat at many.

Chapter 7 : Generative Art Matt Pearson - [PDF Document]

generative art matt pearson PDF, on amazon. Computers, laptops. Download epub, mobi, txt, or doc. Processing is a flexible software sketchbook and a language for.

Chapter 8 : Manning | Generative Art

"Matt Pearson has provided an excellent introduction to generative art using Processing. With just the right mix of instruction and inspiration, working through the book was a pleasure, and I was producing interesting and rewarding results right from the start.

Chapter 9 : Generative art - Wikipedia

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