



Theory **Hands-on** *Media Art*

Media Art Theory **Hands-on**

Hands-on Media Art Theory

TIM Exhibited @ Ars Electronica Festival 2019

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INTRODUCTION

THEORY OF INTERACTIVE MEDIA .

NEW MEDIA IN ART AND CULTURE

Theory of Interactive Media (TIM) is the youngest study program of the Faculty of Arts of Masaryk University, which provides education in the field of arts and culture. It focuses on the study and research of art that arises from the intersection of artistic creativity and technological innovation in a broader cultural-historical context. It can, therefore, appeal to young people from the “born digital” generations, for whom it is natural to use technology as a tool of creativity and communication. Students of the program are introduced to new media art history and theory, as well as its cultural roots. An ability to critically reflect on new media art, its diverse historical sources and consequences of the information society as well as a comprehension of the material properties of the media are developed alongside.

In addition to theoretical lectures, the TIM’s curriculum includes courses providing hands-on experiences in new media art, game design, new media curatorship, and marketing. Thus, graduates of the program are professionals whose theoretical knowledge of the art and culture of new media relies on practical experience with the media. They are theorists who view new media not only from the critical distance of the academic “ivory tower”, but those who are able to verify their arguments experimentally with practical examples using new media. We are convinced that only in this way it is possible to understand the essence of the new media art, to be able to see its limits, to evaluate its quality and even to discover its until now untapped potential.

The aim is to bring up graduates to be creative personalities capable of actively contributing to the shaping of the future, to be able to solve the new challenges arising together with development of technology in a broad sense of the word¹ through prototyping of possible scenarios, systems, artefacts and critical reflection of trends in society and culture.

¹ E.g. challenges of Industry 4.0, development of biotechnologies, new threats arising from addictive usage of new media.

Currently, TIM is the only university study program in the Czech Republic and Slovakia focused on the study of the new media art, which provides a comprehensive education in both bachelor's and master's degrees, in full-time and distance form. Teaching is provided by qualified professionals with extensive educational work, who are often actively involved in organizing festivals, curators of new media art exhibitions or they even create new media art themselves.

TIM BY NUMBERS

- **2004**
TIM was for the first time accredited as a major/minor bachelor's and follow-up master's degree study program.
- **2004/2005**
Teaching started in the academic year 2004/2005.
- **2006/2007**
TIM has gained accreditation for full/time studies both in bachelor's and master's degree. At the same time, it obtained accreditation authorizing to conduct a rigorous procedure.
- **2008/2009**
Teaching of the follow-up master's study program started in the academic year 2008/2009.
- **2019**
2 118 of bachelor's degree graduates from TIM.
- **2019**
254 of the follow-up master's degree graduates from TIM.

TIM @ ARS ELECTRONICA

In 2019, TIM was invited to participate in the prestigious Ars Electronica International Festival in Linz, Austria. Particularly, to take part at the CAMPUS exhibition, organized by Ars Electronica and the Linz University of Arts, which presents works of art by students and teachers at the institutions of higher learning from worldwide, whose curriculum takes an innovative approach to teaching media art and media culture².

Presentation of Theory of Interactive Media together with more artistically oriented study programs at the Ars Electronica festival makes good sense just in the year 2019, in which we commemorate the 40th anniversary of the founding of Ars Electronica – an international festival of art, technology, and society – which for the first time took part in 1979 (On September 18, 1979) under the name Festival for Art, Technology and Society. This milestone in the history of the festival calls for a critical reflection and appreciation of the past forty years of festival development, as well as a recapitulation of the current development of the relationship between art, technology and society, and speculations about their possible future. In other words, the anniversary calls for theoretical discussion of the subjects it usually deals with.

² Paraphrase of an invitation letter.

A R S E L E C T R O N I C A 2 0 1 9

The organizers annually announce the theme of the festival (e.g., in 2018 it was ERROR, the Art of Imperfection, in 2017 AI, Artificial Intelligence. The Other I). This year the festival has got two topics – Out of the Box and The Middle Crisis of Digital Revolution³.

THE MIDDLE CRISIS OF DIGITAL REVOLUTION

Ars Electronica is celebrating four decades of acting as one of the world's largest and most important platforms for media art, ideas for the future, and innovation. "The digital revolution has left no stone unturned and has changed our lives from the ground up," says Gerfried Stocker, artistic director of Ars Electronica.

Even though, digitization has touched all areas of our lives, it has above all simplified and accelerated existing processes in our industrialized world. "What's coming now is something completely different," says Gerfried Stocker, looking ahead: "We are on the threshold of a time when thinking and decision-making will be digitized. Through the use of artificial intelligence, the digital will become truly independent for the first time." So it will not become any quieter at the intersection of art, technology, and society. On the contrary:

"Revolutionary developments are in the offing that will greatly engage all of us in the coming years," Gerfried Stocker is convinced and adds: "Our society has never been as challenged as it is today to play an active role in shaping the future. Initiating the necessary discourse for this is a core competence of Ars Electronica, which is therefore more relevant and important than ever before".⁴

³ See Ars Electronica festival web site: <https://ars.electronica.art/press/en/2019/04/08/ars-electronica-festival-2019-out-of-the-box-die-midlife-crisis-der-digitalen-revolution/>

⁴ Ibidum.

“Out of the Box” has several very different meanings. On the one hand, it refers to ready-made products that can be used immediately. This is exactly what we see offered to us these days, in the form of consumption- and entertainment-oriented devices and the digital worlds of social media. We line up before opulent glass temples to purchase unnecessarily expensive devices which we can then only use as the company that brought them to market sees fit. We can't even change the battery ourselves. They have also stripped us of the right to say how and by whom all the data can be used, all the information that is generated as soon as we begin to use these devices. What started out as a dream of technology that is easy for everyone to use has long since become the nightmare of a digital leash, for which we also pay a hefty price. As is so often the case, economic success causes a decline in creativity and innovation. New and useful features haven't been coming “out of the box” for a long time – just the same old things in different packaging.

This very sobering “out of the box” of the economic sphere stands in contrast to the charismatic icons of the startup and innovation world. Here “out of the box” stands for that which is new, that which disrupts. It is about new paths and thinking outside of every convention. It is about nothing less than reinventing the world – or at least reinventing profit-making products and services...

But “Out of the Box” also puts us in mind of Pandora's proverbial box. A thought that we encounter more and more frequently in light of the many current problems of our high-tech world.

In any case, no matter which of these readings we prefer, we must all get “Out of our Boxes”. We must get out from cover, out of our comfort zones, our bubbles, our ignorance. We must get out of the mistaken belief that we can avoid responsibility for shaping the future.⁵

⁵ Ibidum.

TIM IS 10

This year, TIM also celebrates an anniversary, because in 2019 it is 10 years of running of the study program at both bachelor's and master's degrees, i.e. full-time university studies.

The title of our exhibition, which is Hands-on Media Art Theory, suggests that the curriculum has developed towards convergence of theory with practice, inspired by media theories that have been developed since 2000, which focus on a materiality of media, their functionalities, and a performative character as well as we are investigating potential of new media applications in different cultural contexts.

The exhibition was prepared by a total of eight TIM teachers, six of whom are its graduates, and there will be exhibited works by several dozens of TIM students. Thus, the exhibition is not just a fragment of the TIM image, but it provides a much larger format, that can give visitors a good idea of who we are, where we come from and where we are going. The TIM presentation at Ars Electronica is a milestone from which we can count down the new decade, in which we will continue in an effort to establish TIM as a respected scientific discipline and a popular study program within the university ecosystem, and will continue to develop partnerships with external subjects both in a research and teaching, because they give to our efforts certain meaning and motivation.

ACKNOWLEDGEMENT

The participation of TIM at the Ars Electronica festival was supported by several institutions: the Faculty of Arts of Masaryk University, the Institute of Musicology of FAMU, the Brno House of Arts and RWS MORAVIA.

Our thanks go to all of them.

HANDS - ON MEDIA ART THEORY
/ CURATOR'S STATEMENT

MEDIA ART

New media art is a term denoting the critical, subversive, speculative, and creative strategies which have the potential to test the limits of programmed processes, expressions, and experiences mediated by information and communication technologies infrastructure. New media artifacts are a result of creative acts which resemble the works of curators rather than that of creators, DJs rather than that of interpreters, and dancers rather than that of sculptors.

MEDIA ART THEORY

Both artists and theoreticians are trapped in the technologically enhanced network of distributed control. They are sentenced to wander in search of escape routes, survival kits, and red/blue pills. Critical distance, which has been taken as insurance for objectivity and independence of academic theoretical reflection of culture and society, was revealed to be a mere illusion of the too self-confident intellectual mind. There is nothing quite like objective truth behind the integrated spectacle of mediated, instant experiences, but there is only the skilfully designed rhetoric of arguments knitted within the fuzzy human-machine interactions. In other words, new media art and theory are situated within the same coded and programmed environment. Therefore, the media art theory not only reflects on media art practices, but it progressively merges with them, and thus itself becomes speculative, subversive, and experimental.

HANDS-ON MEDIA ART THEORY

The Theory of Interactive Media study program is influenced by the convergence of new media art and theory. Its curriculum includes several subjects which provide students with hands-on experiences of new media as tools of creativity. The goal is to acquaint them with the 'logic, vocabulary, and grammar' of the media that artists deal with.

The exhibition shows selected outcomes of the media art hands-on lectures. Moreover, two examples of 'out of the box' research projects, situated on the borderline between media art theory, practice, and curatorship, will be presented⁶.

Jana Horáková

⁶ The text was written for Ars Electronica Festival 2019 catalogue.

STUDIES ON SOFTWARE

VISUALISATIONS
OF A NEW ORDER

PRODUCTION OF MEDIA ART
HISTORY

In recent years, the interest of new media theorists in how software and materiality of new media in general influences and shapes our society and creates our world increases. Theorists and artists have become more aware of processes that take place in the shadows of our attention; however for a long time have been escaping to the critical reflection of theorists of culture and art. Specific approaches of theorists involved in this discourse can be seen as different points of view on new media: they investigate the nature of programming languages, uncover their mathematical logic, functions, algorithms and their performative power, which is gradually replacing linear and symbolic logic of cultural narratives, but they also conduct a research on specific cultural formats, strategies, and aesthetics that programmed media bring about and co-create.

This turn in new media theory is metaphorically described as a “black box” of new media opening. This means that the theory of new media becomes more critical on the one hand, but on the other hand, much more connected with the hands-on experience of working with new media. The position of a new media researcher is no longer described as a “critical distance”, but rather as a strategy of dealing with new media, e.g., testing of the limits of programmed media, and a speculative inventing of possible forms of new media, or appropriation and study of new cultural formats.

BEHIND THE INTERFACE

SUBJECT: SOFTWARE ART

TEACHERS: MONIKA SZŰCSOVÁ (SK), ADAM FRANČ (CZ)

MEDIUM: COMPUTER-GENERATED PIECE

Software art refers to the artistic activity that allows software (and the software's cultural significance) to be reflected within the media or material of software. The course Software Art is divided into theoretical lectures on history and genealogy of software art, and its practical reflection. The presented works are the result of linking theoretical and practical skills that students have acquired and demonstrate a variety of approaches to creating and reflecting on software art works. Students use Python programming language (open source) or Nick Monfort's generative web artworks (open to modifications).

Following on Friedrich Kittler's instructions:

“[Students] should at least know some arithmetic, the integral function, the sine function - everything about signs and functions. They should also know at least two software languages. Then they'll be able to say something about what culture is [...].”⁷

⁷ Kittler, A. Friedrich – Griffin, Matthew – Herrmann, Susanne. Technologies of Writing: Interview with Friedrich A. New Literary History, Vol. 27, No. 4, Literature, Media, and the Law (Autumn, 1996), Published by. The Johns Hopkins University Press, pp. 731-742 (12 pages), p. 740. Available from: https://www.jstor.org/stable/20057388?read-now=1&seq=10#page_scan_tab_contents



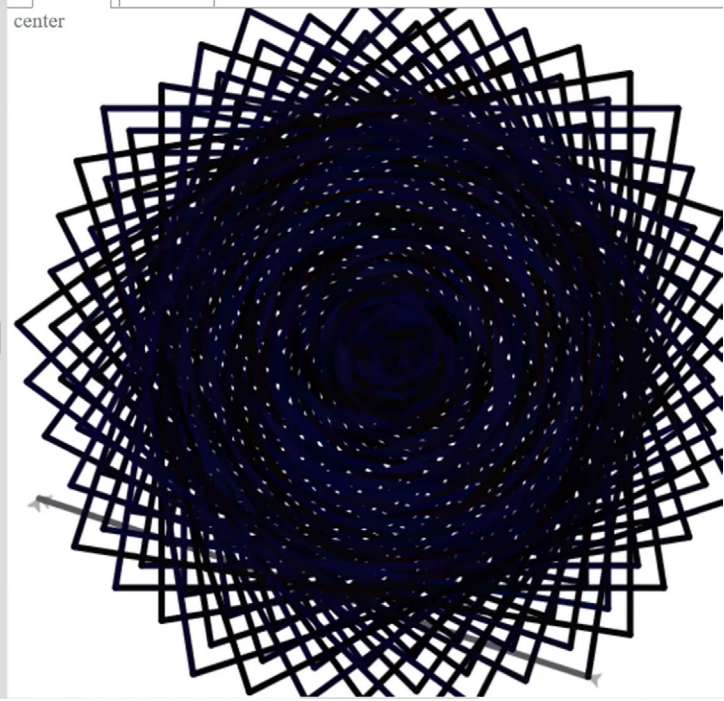
main.py

saved

```
1 import turtle
2 import random
3 t = turtle.Turtle()
4 x = random.randint(35,325)
5 y = random.randint(2,8)
6 t.pensize(y)
7 t.speed(10000)
8 uhel=x
9 delka=0
10 for i in range(900):
11     delka+=1
12     uhel+=0
13     t.forward(delka)
14     t.left(uhel)
15     r = random.randint(0,10)
16     g = random.randint(0,5)
17     b = random.randint(0,45)
18     t.color(r,g,b)
```

result console

center



Author: Petr Baueršíma
Technique: Image generator
Software: Python programming language
(open source)
Year: 2018

Instructions from the program that forms the basis of this work draw at a swift pace 900 geometric forms in which the length of the individual sides and the angle between them are randomly defined. These forms gradually increase in size, stacking on each other until they finally fill the whole screen. The resulting image provides an immersive experience that resembles looking into a bottomless abyss. Also worth mentioning is the procedural aspect of the work because the movement of the “turtle”, which is tasked to depict individual formations, is accelerated and points to the ability of digital media not only to automate a particular activity but to perform it at a much faster pace. The work, therefore, encourages reflection on the different passage of time within the digital media.



main.py saved

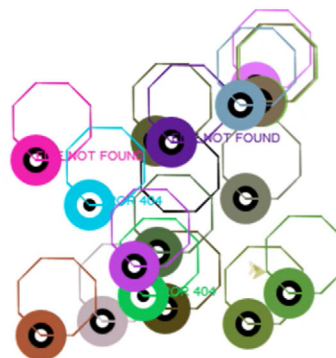
```

3 t = turtle.Turtle()
4 for x in range(30):
5     for y in range(8):
6         t.forward(25)
7         t.left(45)
8     r = random.randint(0,255)
9     g = random.randint(0,255)
10    b = random.randint(0,255)
11    t.color(r, g, b)
12    pos_1 = random.randint(-100,100)
13    pos_2 = random.randint(-100,100)
14    vpravo = random.randint(0,90)
15    delka_cary = random.randint(100,200)
16    t.color(r,g,b)
17    t.penup() #zvednout
18    t.setpos(pos_1, pos_2)
19    t.pendown() #polozit
20    if r > 50:
21        t.dot(20, r,g,b)
22        t.dot(10, "black")
23        t.dot(5, "white")
24    elif g > 20:
25        t.write("ERROR 404")
26    if r < 50:
27        t.dot(20, r,g,b)
28        t.dot(10, "white")
29        t.dot(5, "black")
30    elif g < 20:

```

result console

center



Author: Luisa Pavlíková
Technique: Image generator
Software: Python programming language
(open source)
Year: 2018

The basis of this work is made of octagons, the layout of which is randomly generated. The code of the work is complemented by a variety of conditions that add small colour circles and short text messages to the image: FILE NOT FOUND, which is commonly encountered in cases when our computer system cannot find the file you want, or ERROR 404, which the web browser uses to tell us that the requested webpage could not be found. These inscriptions bring a layer of meaning into the work that thematizes randomness, error, and ephemerality that are specific aspects of digital work.



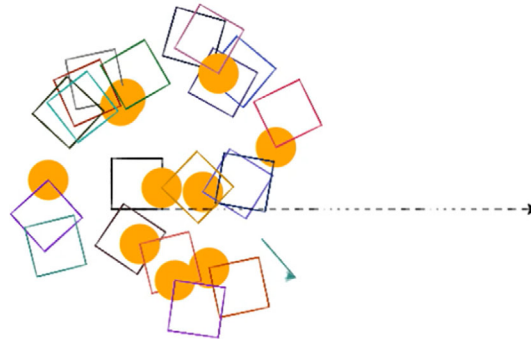
main.py saved

```
28 t.dot(20,"orange")
29 elif g > 100:
30     from turtle import forward, penup, pendown, left
31     for i in range(10):
32         forward(i)
33         penup()
34         forward(6)
35         pendown()
```

result

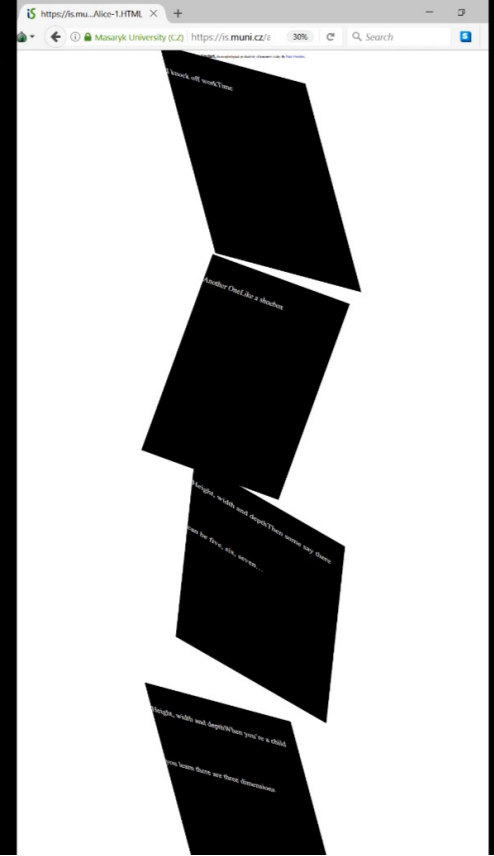
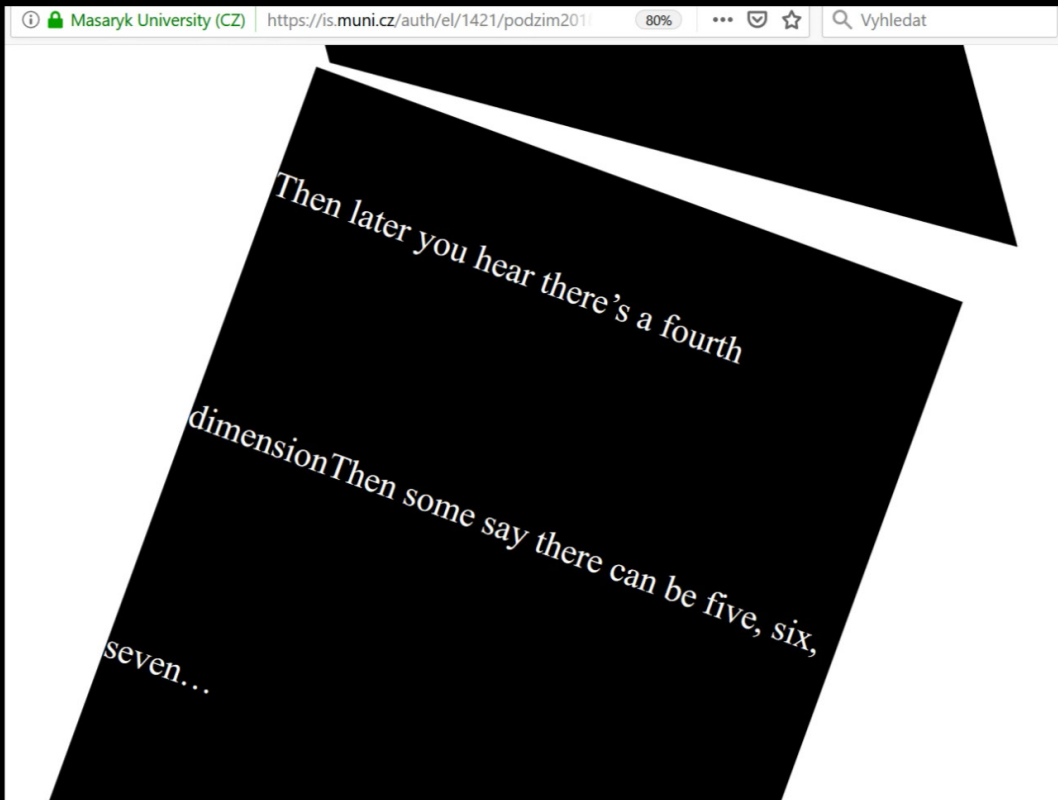
console

center



Author: Martin Kolářček
Technique: Image generator
Software: Python programming language
(open source)
Year: 2018

The program's commission is to generate shapes in random positions. At the same time, however, the principle of chance is supplemented by an element representing the order, which is a dashed line. With the aid of this line both, the stage the program is running at and how many times the last condition was repeated can be determined. The resulting image is thus simultaneously generated graphics and a tool helping to reveal the functions of this program better.



Author: Alice Minaříková
Technique: Webpage appropriation
Software: Nick Monfort's generative web artwork
(open to modifications)
Year: 2018

This work was created by the appropriation of the website of Nick Montfort called Upstart. It consists of a white background and four squares in baseline colours of red, green, blue, and yellow, on which one-word inscriptions are continually changing. Montfort thus points to the performative nature of the code that runs behind the seemingly static depiction of the web, and the associated possibility of infinite variability. By interfering with the source code, the author deprived the website of colour and left only black squares on a white background. Besides, she twisted them and lined them up below each other, giving the impression of a spiral 3D space arrangement. Mainly, however, the changing one-word inscriptions were replaced by excerpts from the poem Another One, which appeared in the movie Paterson by Jim Jarmusch. This poem, which works in the film by its simple statement, but which can change our way of thinking about life, appears on the Upstart website as randomly arranged individual sentences. It turns out, however, that even a deconstruction of the form does not detract from the poem's strength to change how the world appears to us. We can say that its use in the appropriation of the Upstart site is the fulfilment of the effects of this poetic work but by other means.

rozmarynrohlik

testovinyrohlik

veganspagety

parekcihla

Author: Renata Václavíková

Technique: Webpage appropriation

Software: Nick Monfort's generative web artwork
(open to modifications)

Year: 2018

This work, too, was created by appropriating Nick Montfort's website Upstart, aimed for modifications. The author kept the original layout of the website, ie, white background with four coloured squares of red, green, blue, and yellow, and only replaced the changing one-word inscriptions with names of different foods. By appropriating of the website, a piece of playful poetics was created, typically called Hamky Ňamky. Generating a variety of different food and groceries combinations evokes the free nature of the DIY subculture of chefs who do not necessarily follow recipes (programs) but prefer to experiment which brings a poetic touch and a moment of happy chance to the cooking experience.


```
main.py history
155391 pocet_pokusu = int(input("Pocet pokusu: "))
155392
155393 input("Stiskni ENTER a hra začne...")
155394
155395
155396 import colorama
155397 from colorama import Fore
155398
155398
155399 vysledek = []
155400 vse = []
155401 slovo = ''
155402
155403
155404 import random
155405
155406 samohlaska = ['a', 'á', 'e', 'é', 'i', 'í', 'o', 'ó', 'u', 'ú', 'ů', 'ú',
                'y', 'ý']
155407 souhlaska = ['b', 'c', 'č', 'd', 'ď', 'f', 'g', 'h', 'ch', 'j',
                'k', 'l', 'm', 'n', 'ň', 'p', 'q', 'r', 'ř', 's', 'š', 't', 'ť',
                'v', 'w', 'x', 'z', 'ž']
155408
155409
155410 for y in range (pocet_pokusu):
    dle zadání
    #výpis počtu řádků
    for z in range (5):
        #cyklus tvorby
        jednoho řádku
        slovo = ''
        #vynulování
        proměnné se slovem
    for x in range (random.randrange(3,8)):
        #cyklus tvorby
        slova
```

```
nqny léúf rntčq rúisť nxjpsqv
ňyp žšwd' ňčé áúykchotl vhowúswdý
ihňtlú tdvý wzl stw fyptpy
hđqnx tšřksl wpuwvk khchflú vzxwfych
ptř gúexnú hélvdúp yužňy slzž
ylúére ňvú úvgzměš lchgy ůvt
uqvzzu tyňyxn dýquzx nych olex
ýšisqxá nujúgú nzyž spket frs
essv dqórnlt fšž yđhv trchroz
vpcjroh qđň úilq únyťyz úgióksv
úđđráč xzn řlgeémv eyy řwůh
přrlitá oúbužž řgxsje řřmť xřra
óúřndřl wrqtřó hótum vxw xšn
rwúýřn sxxu twyp zgfg quštdú
oqřqtň zřřlmd' gřřwý vóxuřón ňxžyřóř
dihhne xvpřiz vsóstq mwchwžyš lřřžšsl
uhžř tdžchzy kžž řjyixé úrchzkkw
gkxkň qsztó úixřojř spgů xwxkwázk
qpđer žiýšúf řzxjúch lúvný pkg
zyč whň útj nttqř đřrbúqú
střřkhuže smzpič tpt řylznt rztlwiy
ňkfouy řřlltť zůnv éocqš cheóm
dějuivép žwúřp iqxéjxy mapsx řyřx
kčewhw řřvxšt ýpčšř rdđř vmeň
řluhmtř řkyvšn ňúlůň rxňkó řřxnz
zqňň pžnrň chtť ňgůx qxmúžů
řnxo jřř uvé řfúšp merúsnó
qđů sfyhpňt xznščřý zótúrou úřzmpi
chydúz khňšúv qlóř řuv léřet
čwš ňgřřs stúřř žchpžqkž řswřh
žřřššó ňyúř ótišpxž pksyz lýn
tyqtúm xéřřw gvřňňg cznřzzú pňwx
nošřřoif řwzžtx kqrzu yvšúý čizn
ýpplw hwšňúý bivž dnožgiňž plýwřw
úňexu řčđxwš úřřpřpř dhňhht ýž
```

Author: Jan Špičák

Technique: Text generator

Software: Python programming language
(open source)

Year: 2018

The Play of Words is precisely the black box that the artist and media theorist Florian Cramer talks about in his text Software Art. It is a work that the user receives only with a brief guide to its use but knows little about its functionality. Is it a sophisticated system or just a result of chance? How do I get the desired result? All of this is hidden in the code, and the regular recipient of the work has no chance of knowing how the work operates. Yet we cannot say that this is a piece of digital art in the sense of a work that aims to provide a visual, acoustic, or other experience. What the author directs our attention to is the generative nature of the work, the process of its creation, rather than the result of that process. This work can be perceived as a visualization of the nature of digital media, and thus a work that can be called software art.

MATH IS THE NEW LATIN

SUBJECT: ARTGORITHMS

TEACHER: TOMÁŠ STAUDEK (CZ)

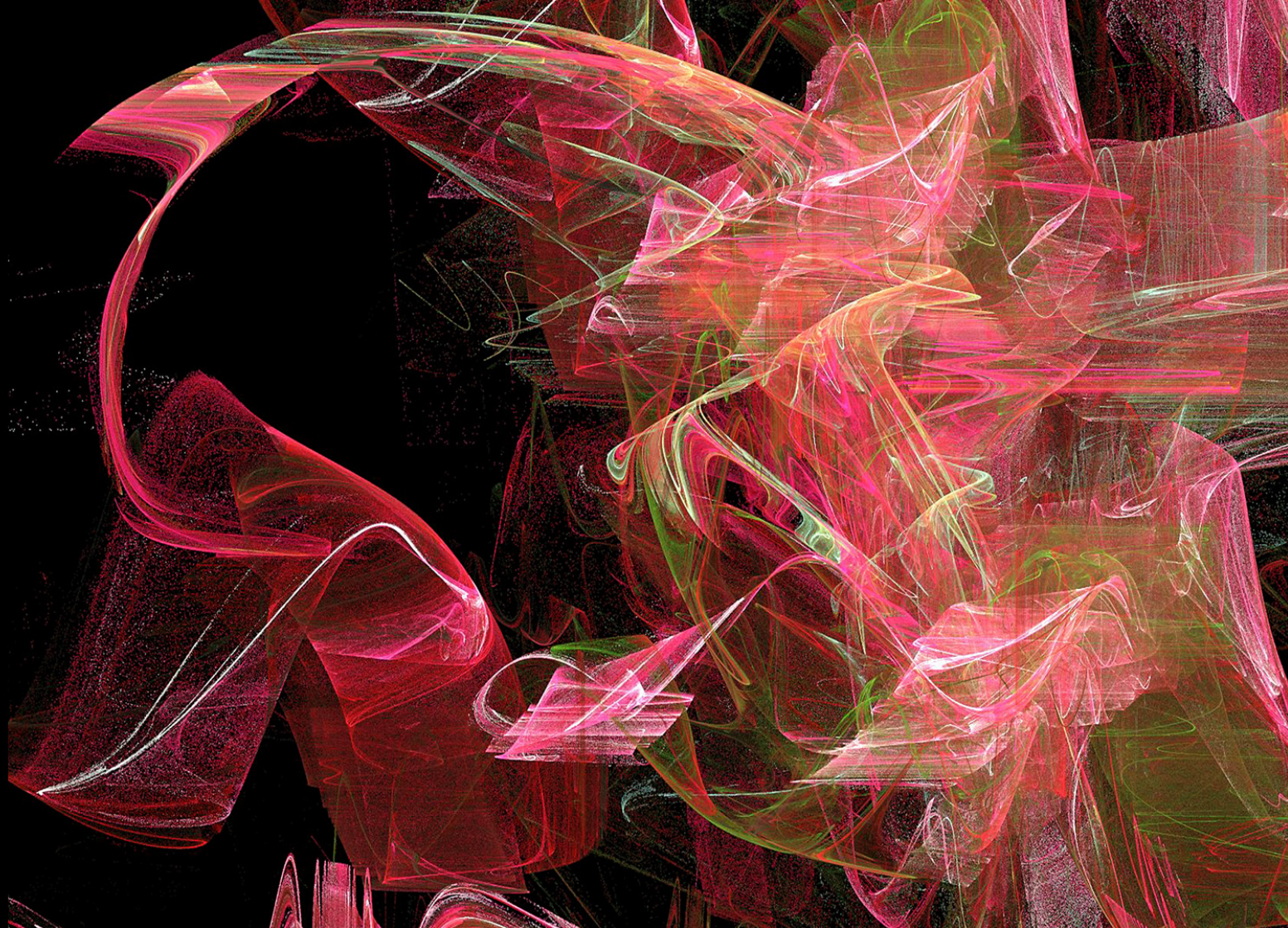
TECHNIQUE: MATHEMATICAL IMAGES

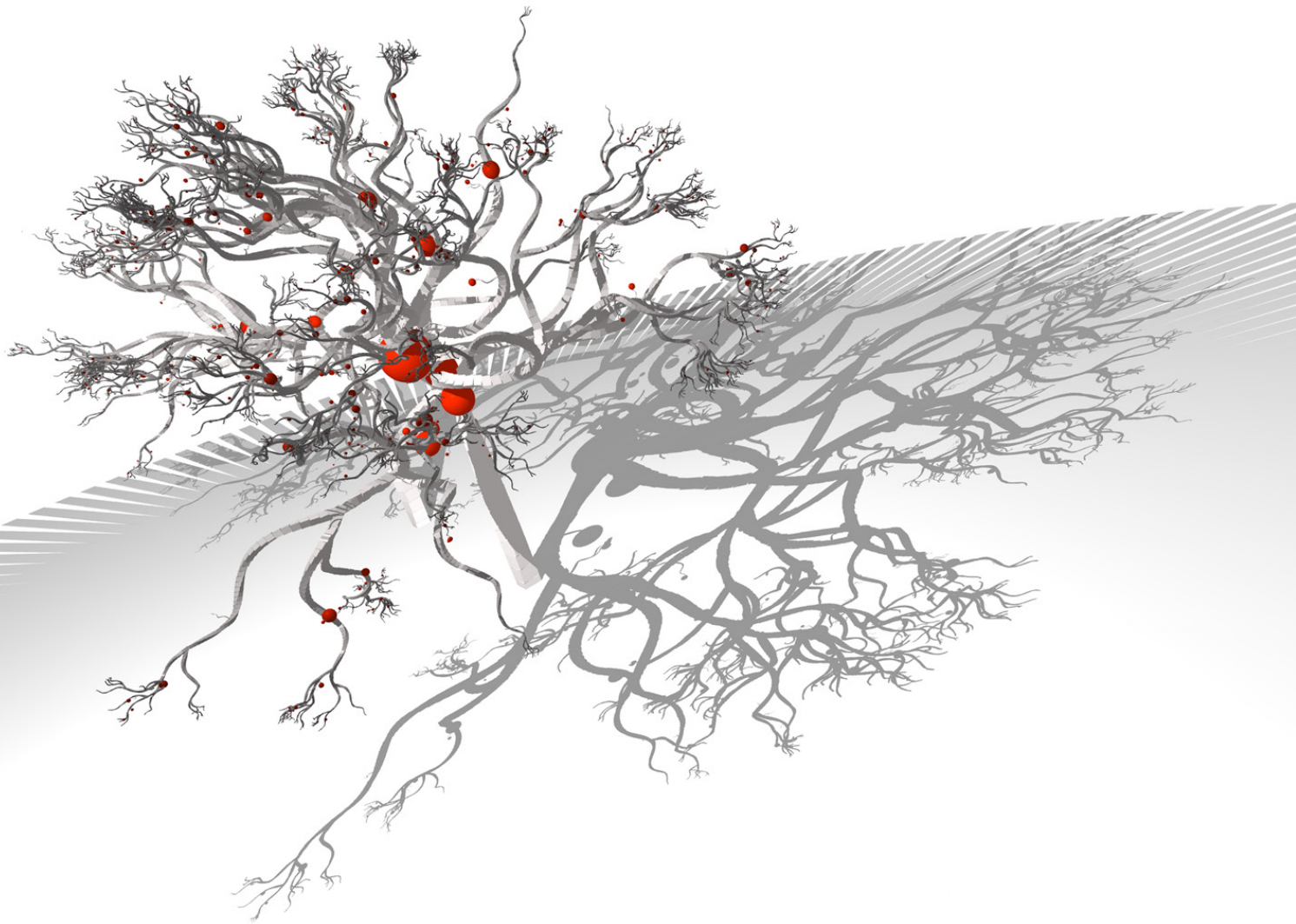
SOFTWARE: DIFFERENT KIND, SEE [HTTP://ARTGORITHMS.DROPPAGES.COM/](http://artgorithms.droppages.com/)
SOFTWARE

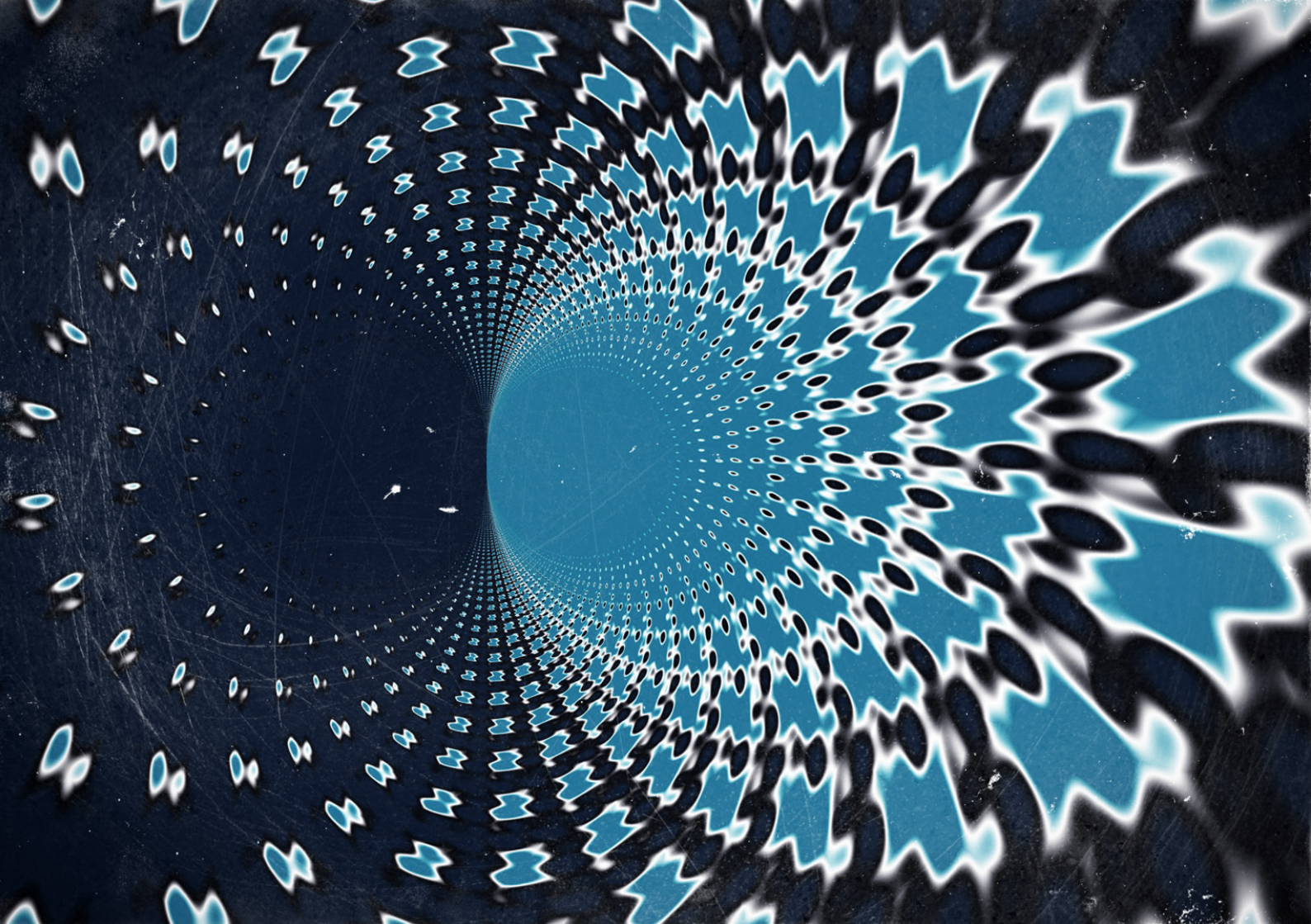
YEAR: 2016-2018

Algorithms in the art are no longer mere visualization tools, but rather creative partners with a considerable share of aesthetic responsibility. The universal language of algorithms is math. Students of the subject put hands-on principles of mathematics in art, get acquainted with more than 50 creative software tools (visual grammars, fractals, chaos, tessellations, etc.) and learn how to understand and critically reflect on calculated creativity. Lectures are divided into theoretical track covering computational foundations of art, and practical assignments concluded with a collective exhibition.









In each image there is a story concealed: a testimony that there is no need to excel in mathematics nor to be a trained artist to comprehend software aesthetics and often produce impressive graphic works. Many numeric calculations bring along visual qualities that can be explored with elementary mathematical knowledge supported with appropriate software tools. Students develop their aesthetic skills in practical seminars using freely available applications for procedural computer graphics. Unlike all-purpose apps (such as commercial photo editors or 3D modelling tools) these programs are focused on inventing algorithmic imagery. The principle of creative work resides in fine-tuning mathematical formulas lying latently behind the generative process and in analysing parameters that affect the final rendering of an image. The intention of such an approach is to incite affection for mathematics among students and to celebrate and popularize it as the new Latin for the software aesthetics discourse.

Authors: Jakub Bajza, Katarína Bazelová, Jiří Bednář, Mark Birger, Petr Caha, Marek Čierny, Michal Danko, Cecílie Fialová, Martin Honěk, Júlia Chodúrová-Bútorová, Václav Chvíla, Jakub Jakubec, Filip Karpíšek, Marcel Kiss, Martin Koláček, Katarína Kolesárová, Jakub Krbec, Veronika Kroufková, Natália Lajčiaková, Veronika Něničková, Petr Nodžák, Miroslav Novák, Peter Pilát, Jan Pokorný, Petr Pololánik, Michaela Riganová, Vojtěch Rylko, Michal Ryšavý, Zuzana Skačíková, František Skála, Zuzana Skalníková, Vilém Šoulák, František Spurný, Jiří Staněk, Adéla Štelclová, Jakub Šulek, Kristýna Šuráňová, Michal Tabášek, Hai Duong Tran, Veronika Urbášková, Linda Wojnarová, Veronika Zapletalová, Lukáš Zbránek, Marek Zouhar, Anastasia Zvereva

REMAKE MEDIA HISTORY!

SUBJECT: THE BEST OF NEW MEDIA ART

TEACHER: MARTINA IVIČIČ (SK)

MEDIUM: VIDEO

Born online, new media art is like a cultural nomad aimlessly walking through the rhizomatic meanders of an archive without walls. It flickers back and forth in the annals of history and crosses geographic, cultural, and institutional boundaries, both physically and virtually. The aim of the subject The Best of New Media Art is to acquaint students with media art history similarly. They are encouraged to enter into a creative and critical dialogue with canonical works of avant-guard and media art to link current new media art and culture practices with their roots. Students use various strategies of postproduction (N. Bourriaud) and contemporary media tools like Adobe Illustrator, Premiere Pro, PS, Shortcut, text-to-speech, and other available photo and video editing apps.



Risveglio Del Mondo Nuovo

Author: Oliver Bláha

Inspired by: Risveglio di una Città (noise composition), Luigi Russolo, 1914

Year: 2015

Sirens, factories, locomotives – the industrial city at the beginning of the First World War, in 1914, wakes up. Futuristic song *Risveglio De Una Citta* (Awakening of the City) by Luigi Russolo is a typical product of Italian musical futurism in the early 20th century. How would this futuristic composition sound if it was not inspired by the industrial environment of the early 20th century? Today, the sounds of the locomotive and factories are replaced by a somewhat different noise: the sounds of the flickering keyboards, clicking computer mice and the artificial sampled sounds swooping out of our “smart devices” speakers. Ultramodern technology creates the noise of today’s environment. The mix of sounds creates a song of the awakening ultra-modern city.

Used works

Music:

The New World Symphony, composer Antonín Dvořák, Wiener Philharmoniker, conductor Herbert von Karajan, 1985.

Audio-visual material:

Color Change Digital Alarm Clock in the dark:

Youtube: <https://www.youtube.com/watch?v=kNLRLLSsx6Nc&feature=youtu.be>

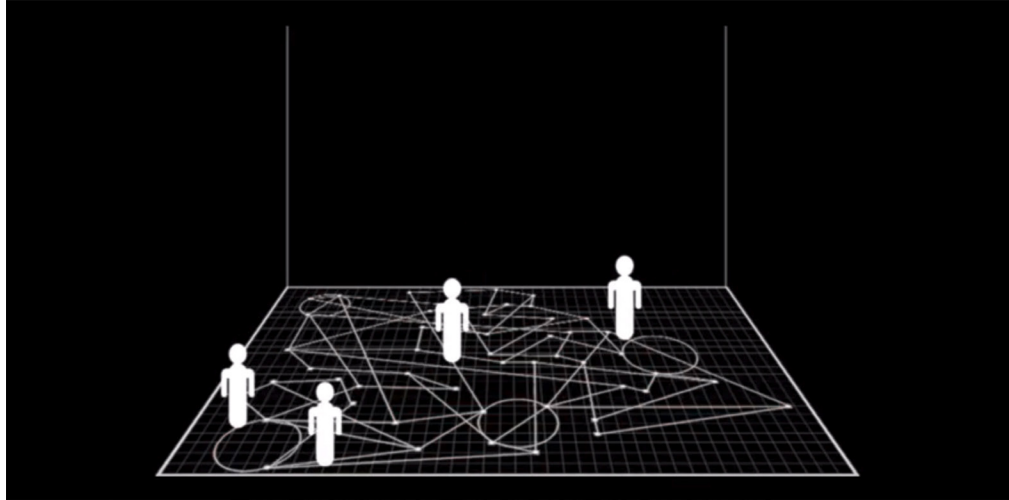
Mechanical Keyboard Typing Sound 30mins (Razer BlackWidow Ultimate) [ASMR]:

Youtube: <https://www.youtube.com/watch?v=24tWz7gmngl&feature=youtu.be>

Time-lapse of pedestrians on a busy city street in Tokyo:

<https://www.youtube.com/watch?v=sDwfcYTpQkl&feature=youtu.be>

All rights to the found footage segments are reserved to their original owners and creators:



Google Earth Ballet

Author: Petra Pohoničová

Inspired by: Computer Ballet (the first use of a digital computer to create an animation of stick figures on a stage), Michael Noll, 1965

Year: 2019

The concept of the work is inspired by Michael Noll's Computer Ballet, which was created in 1965 as the first computer-aided choreography. This remake is creating a computer ballet choreography using Google Earth, the famous virtual 3D globe. The video is follow-up postproduction of the work by Noll, where the main idea is to create a choreography using random points from Google Earth. It refers to the movement and tracking of person movement through Google Earth, which continually records the path of our movements by collecting our current location data.

Random points on the Earth surface are selected and form a path for the whole choreography. The author compares our tracked movement to a kind of ballet choreography on stage. The creation of a postproduction work: The whole work is based on the principle of animation, where each part is made up of a sequence of a picture. These are created in vector format using the Adobe Illustrator program and then combined in the Adobe Photoshop bitmap program, then linking vector and bitmap graphics in Shotcut and adding audio.

Used works

Old Movie Countdown Timer With Sound Effect HD FREE with download link: https://www.youtube.com/watch?v=u7gf6_85-jQ

I DONT KNOW HOW BUT THEY FOUND ME - Do It All The Time: <https://www.youtube.com/watch?v=hXzPxBhbmY8>

Static Sound Effect (White Noise): <https://www.youtube.com/watch?v=MwnBDjTqp8A>

(FREE) Trap Loop Kit/Pack 2019 - MP3 (Vol 1, Type Samples):

<https://www.youtube.com/watch?v=FXR68s6YiyY>

Google Earth [print screen]: <https://www.google.com/intl/cs/earth/>



Act III, Scene I

Author: Veronika Hlavatá

Inspired by: The Intruder (interactive story told by videogames), Natalie Bookchin, 1998-1999

Year: 2017

The video, inspired by *The Intruder* (1998 – 1999) by Natalie Bookchin, is set in a new context. An interactive story in a new concept based on an excerpt from William Shakespeare’s *Hamlet* (Act III, Scene 1) is transformed into the interactive account taking part in videogames of the 20th and 21st centuries environment. The video captures moments in which the viewer would hear the story using the games (and the progress in them). The design of well-known computer games is complemented by the character of William Shakespeare, which evokes the feeling of the simultaneous story. The entire recording is accompanied by an audio track in which the dialogs are created using the free “Text-to-Speech”. Voices are differentiated and generated individually for each character.

Used works

Cabela's Big Game Hunter Pro Hunts 2014 Gameplay PC HD

<https://www.youtube.com/watch?v=ahQpZP1O204>

Pong, 1972

Gun Fight, 1975

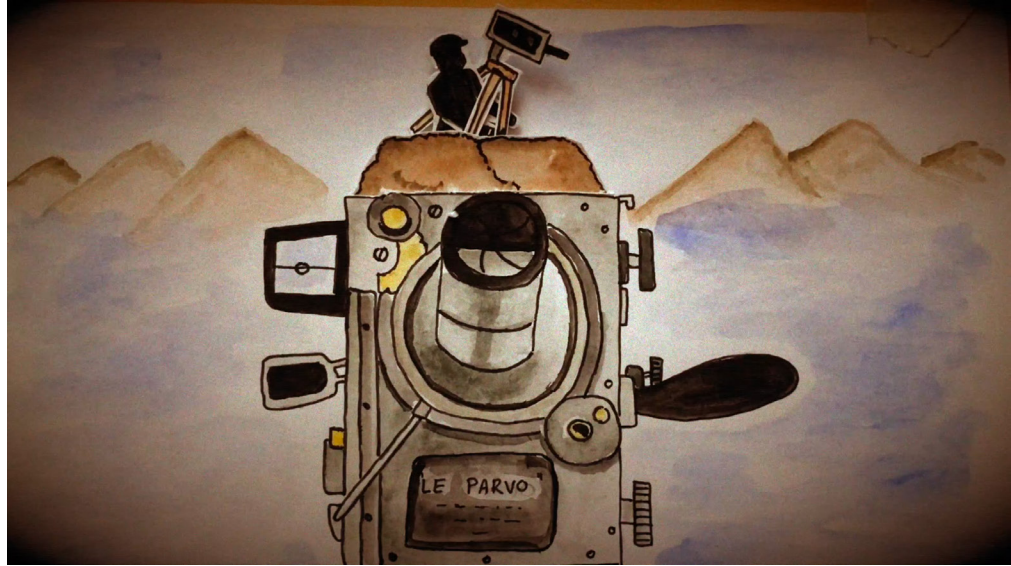
Pacman, 1980

Tapper, 1983

Duck Hunt, 1984

Street Fighter, 1987

Evolution of Video Game Graphics 1962 – 2017: <https://www.youtube.com/watch?v=3H6hnFV-nDU&t=37s>



Animated Vertov

Author: Filip Kratochvíl

Inspired by: Man with the Movie Camera (experimental documentary), Dziga Vertov, 1929

Year: 2019

Inspired by camera movement, cutting and merging of images discovered by Dziga Vertov, this remake was processed by hand-drawn animation. Selected screenshots were repainted and processed to moving objects. Once the moving object scenes were composed into multiple short video clips, then were emulated the movement of objects.

As a method of processing, the author has chosen a hand-drawn animation because he is actively involved in painting. It refers to the iconic nature of this work. The Vertov's famous movie is treated just as My Boyfriend Came Back From the War by Olia Lialina, which was remade by other artists into various media (gifs, animations, web banners, etc.).

Used works

Music:

American Horror Story series.



The Rise of Cyberpunk

Author: Ondřej Myšák

Inspired by: Deus Ex, 2000, Deus Ex: Human Revolution, 2011 (videogames)

Year: 2015

As time passes, technology is becoming part of our lives, and hardly anybody could imagine modern life without them. The more they are being developed, the more we can see cyberpunk genre aspects which become realistic more than it looked like in the past. Although improving the human body with cybernetic parts is still in development, maybe once they will become an everyday part of life. In health care, it could bring the revolution, and people could get back or improve their walking abilities, sight, or hearing. But what if these improvements would become part of our culture and everyone would use them? Would people use the advantage of them for their benefits? Would there be chaos in society? And could we even still call

ourselves people? Rise of Cyberpunk is trying to show one of many possible scenarios which could become real after bringing these technologies in the collective society. This work is inspired by many audiovisual works from cyberpunk topic which has also been used as a source of some scenes.

Used works

Deus Ex – Human Revolution: Official Purity First

Propaganda Trailer [HD] [online]. [cit. 2015-05-30].

Available at: <https://www.youtube.com/watch?v=Gcsd6mJ3R08>

Deus Ex_Mankind Divided – Announcement Trailer

[online]. [cit. 2015-05-30].

Available at: <https://www.youtube.com/watch?v=ejRFQalsvjO>

EX MACHINA Trailer # 3 [online]. [cit. 2015-05-30].

Available at: <https://www.youtube.com/watch?v=evG0PgeCTWo>

Google Glass How-to_ Getting Started [online]. [cit. 2015-05-30].

Available at: <https://www.youtube.com/watch?v=4EvNxWhskf8>

Jak se stat kyborgem [online]. [cit. 2015-05-30].

Available at: <http://www.ceskatelevize.cz/porady/10213329191-jak-se-stat-kyborgem/20956226650>

10213329191-jak-se-stat-kyborgem/20956226650

Space Shuttle Launch Audio [online]. [cit. 2015-05-30].

Available at: <https://www.youtube.com/watch?v=OnoNITE-CLc>

Stelarc - The Man with Three Ears [online]. [cit. 2015-05-30].

Available at: <https://www.youtube.com/watch?v=ZNdV8llw9Nc>

'Terminator' false arm ties shoelace and deals cards [online]. [cit. 2015-05-30].

Available at: <https://www.youtube.com/watch?v=A15RhaJgxxU>

The Blind Robot, ARS electronica Linz 2013

Total Recall Cyberarts 2013 [online]. [cit. 2015-05-30].

Available at: <https://www.youtube.com/watch?v=cC9bT5CLQkU>

The Future of Augmented Reality [online]. [cit. 2015-05-30].

Available at: <https://www.youtube.com/watch?v=tnRiaHZH9lo>

Music:

Vasco & Paul Reeves: Stormbreaker

Hiroyuki Sawano, Shingeki no Kyojin: Original

Soundtrack I - XL-TT

John Murphy: Heartbeat



Kinedryl

Author: Marek Litoš

Inspired by: Futuristic adoration of movement and speed

Year: 2015

The author used the idea of combining motion and dynamics captured in futuristic images and transforming this concept into a (road)movie. The aim was to get closer to the technical heart of Futurism. Therefore, in the video, there are accelerated train sequences, a car ride and variously abstractly targeted macro shots emphasizing today's chaotic world in motion, and the technology that is increasingly surrounding us. Vibrating the screen evokes the immediate sense of carousel. The video was shot on Canon 600D and Canon IS lenses 18-55mm (reverse macro, car shots), Helios 44-2 58mm (train, stripes) and Samyang 8mm (spiral outdoor shots). Postproduction: Sony Vegas.

A C T U A L A B S E N C E /

V I R T U A L P R E S E N C E

General understanding of the term “virtual reality” within media art discourse is informed by philosophical analyses of “virtual” by Gilles Deleuze. He defines “virtual” as a potentiality and in an opposite to “actual”, both real and current. In this sense, the “virtual” refers to all past events (our history and memories) or parallel events (e. g. what is going on in other room right now).

On the other hand, the technologically mediated experience of virtual reality is synonymous with that of a simulation. In this case, instead of the generally used term “virtual reality”, it seems to be more proper to speak about “simulated reality”. To experience this kind of “artifacts”, we have to merge our bodies and senses with different technological types of equipment tightly. This hybrid interfaces serve as media of the “not real reality” perception and becomes state of the art materializations of cybernetic concepts as feedback and interaction.

AURA OF AUDIOGRAPHY

SUBJECT: AUDIOCULTURES METHODOLOGIES: THEORY AND PRACTICE

TEACHER: FILIP JOHÁNEK (CZ)

MEDIUM: SOUNDTRACK, AMBIENT

What is an audiography? It is a remedy for visual smog we have to breathe; it is an alternative to an integrated spectacle of instant visual and tactile pleasures that seduce us; it is an imprint of sound which can serve as a trigger of personal memories emergence. The audiography has the same power as a smell of Madeleine cakes in Remembrance of Things Past by Marcel Proust. Close your eyes and listen. What do you see?

Presented is the soundtrack of the Faculty of Arts of Masaryk University that was captured using the field recording method. The recording and processing of sounds, rumours, and the overall atmosphere of the faculty were carried out by students of the Audiocultures Methodologies: Theory and Practice class, under the guidance of Filip Johánek. It is an attempt to reflect the specifics of the local soundscape, in which students, teachers, and school staff meet every day. The main aim is to allow listeners to go to the Faculty of Arts at least remotely via the medium of sound and feel the atmosphere of life at the faculty.

Phonography (or field recordings) is a term for the process of capturing sound using recording equipment (microphone and portable recorder) in order to conserve and edit the recorded soundtrack. This practice has various roots in cultural traditions: recording soundtrack in film industry, ethnographic/ethnomusicological field research and musically or soundart-oriented practice of collecting sound material (Italian futurism in music, the French school of Musique concrète, soundart).

Used technology: Portable Recorder Sony PCM D-100, Sound Devices USBpre 2, DPA microphones 4061.



Authors

Recordings: Zuzana Bachorecová, Petr Baueršima, Barbora Feníková, Jaroslav Havelka, Petr Eric Hofmann, Zora Jandlová, Filip Johánek, Jakub Jurčaga, Klára Kacířová, Daniel Kobielsuz, Vojtěch Kozlíček, Jan Kučera, Valeriya Lazareva, Ladislav Mirvald, Peter Rajčan, Ján Solčáni, Ivona Solčániová, Jakub Strezenicky, Renata Václavíková, Alica Volfová, Radek Zatloukal

Technical cooperation, live sound and recording installation: Ladislav Mirvald, Ján Solčáni, Filip Johánek

Edit, mix: Filip Johánek, Jan Kučera, Valeriya Lazareva

Master: Filip Johánek

Photography: Jakub Jurčaga

Thanks: Filip Cenek, Jana Horáková, Jakub Jurčaga, Ivo Jurtík, Ladislav Mirvald, Michael Pokorný, Luděk Smetana, Ján Solčáni, Tomáš Šenkyřík.



COMPUTER GRAPHIC RE-VISITED

RESEARCH PROJECT⁸

AUTHORS: JANA HORÁKOVÁ (CZ), JIŘÍ MUCHA (CZ)

MEDIUM: VIRTUAL REALITY, DIGITAL IMAGES

Virtual reconstruction of the Computer Graphic exhibition organized at the Brno House of Arts Czech Republic on February 1968 by the artist, curator and theorist Jiří Valoch (*1946). Valoch's exhibition was one of the first gallery presentations of computer art worldwide and the very first exhibition of this art in the so called Eastern Bloc. The exhibition project called Computer Graphic Re-visited draws on archive materials research. However, it is not a reconstruction of the original event, rather a remake balancing between a computer art-history experiment and the "remembering exhibition" (R. Greenberg).

The virtual environment is a replica of the exhibition space at that period, and the computer graphics presented at Valoch's exhibition identified by the curators and available in good quality are mapped into the room. There is 20 from 81 images displayed in 1968 to be seen in VR. They are accompanied by documentary photographs of an opening to evoke the atmosphere of the event. A fully immersive experience is ensured by VR glasses and remote control. Other visitors can watch the immersant move in the virtual reality projected on the wall.

The virtual reality experience is accompanied with digitalized replicas of computer graphics. They are presented on LCD screens as morphing images in eternal loops. Six screens for six exhibited authors were mounted on the gallery walls and hidden behind frames. This staging refers to the original exhibition on which the computer graphics were presented hanging on walls, thus as if hiding their nature of computing processes outputs.

⁸ More about the project: <https://ieeexplore.ieee.org/document/8663648>
And: <http://www.dum-umeni.cz/en/vystavy/detail/id/322>

At the same time, the morphing of images has a character of glitch or error, which are understood as indexes of (at least partial) autonomy of these objects from human intentions. The exhibition is enriched by computer music and poetry. It evokes the atmosphere of the exhibition opening in 1968 and at the same time refers to the inherent inter-media nature of digital works, their generative and processual characteristics which change artifacts into events.

Exhibited artists:

Charles A. Csuri (USA) – Leslie Mezei (Canada) – Frieder Nake (Germany) – Georg Nees (Germany) – A. Michael Noll (USA) – Lubomír Sochor (Czechoslovakia, now the Czech Republic and Slovakia).









MACHINE VISION

Avant-garde artists of the 20th century have been fascinated by the concept of machine vision. For example, Dziga Vertov celebrated Kino-Eye, the fusion of the human eye with the camera, which provides us with machine-like experience of the world, otherwise inaccessible to human.⁹ Authors of early computer art were scientists who were more interested in proving machine intelligence, and creativity than in artistic creativity per se. As shows, A. Michael Noll's Mondrian experiment.¹⁰ Although, members of the first generation of video artists, Woody, and Steina Vasulka, staged a 'machine vision' systems to evoke a machine-like experience of the world transcending inevitably anthropocentric vision of human.¹¹ They made several installations, in which they used mirrored sphere and complex technical constructions made of cameras, mirrors motors, etc. to set up systems autonomously reflecting their environments and even itself in 360 degrees.

Machine learning and deep learning as its sub-discipline should be understood as the latest embodiments and results of an investigation of the machine vision.

“Deep learning is a subset of machine learning, a self-adaptive algorithm that gets increasingly better analysis and patterns with experience or with newly added data. Deep learning utilizes a hierarchical level of artificial neural networks to carryout the process of machine learning. The artificial neural networks are built like the human brain, with neuron nodes connected together like a web. While traditional programs build analysis with data in a linear way, the hierarchical function of deep learning systems enables machines to process data with a nonlinear approach”.¹²

⁹ Bulgakowa, Oksana. 2008. “The Ear against the Eye: Vertov's symphony.” Kieler Beiträge zur Filmmusikforschung (2): 142-158. p. 142.

¹⁰ Noll, A. Michael, “The Digital Computer as a Creative Medium,” IEEE Spectrum, Vol. 4, No. 10, (October 1967), pp. 89–95.

¹¹ Steina Vasulka: Machine Vision, 1975- . See: http://www.vasulka.org/Steina/Steina_MachineVision/MachineVision.html

¹² Woody Vasulka: The Theater of Hybrid Automata, 1990. See: <http://www.fondation-langlois.org/html/e/page.php?NumPage=505>

Marshall Hargrave: Deep Learning. April 30, 2019. Available at: <https://www.investopedia.com/terms/d/deep-learning.asp>

There are many applications of artificial neural networks already in use today, e.g., face recognition system developed by Facebook: The system can learn to detect a face and compare it to other faces through layers of convolutional neural networks if a large and coded dataset from which the computer is trained is available.¹³

Another example is DeepDream by Google, which is a kind of side effect of deep learning software used (and taught) on content stored on Google platforms. The Google researchers led by engineer Alexander Mordvintsev found out that network architecture developed in 2014 by Image Challenge Research Group has capacities not only to sort different images, but it has enough information to generate them.¹⁴

Benjamin Bratton reminds us that artificial neural networks generate entirely new imaginary, for which we do not have names yet. Until now, we thought that e.g., a camera or telescope, microscope, or X-ray images provide us with different kinds of machine visions. But now we can see that these images were still results of human perception, just equipped with certain technological extensions. But in case of artificial neural networks used in the field of machine learning the imagery of neural networks generates images that show us how machines see us. It is a much more radical concept of machine vision than we could ever imagine.

Bratton detects two main questions these technologies possess:

How the world looks like as a screen. Which is a question art has explored in some depth already. And another, rather more important one, how we look like objects of perception from the position of the machines which we call to occupy the world, that is seeing ourselves through the eyes of these machinic other.¹⁵

¹³ Facebook Introduces Facial Recognition Software to Prevent Photo Stealing and Catfishing. Published: 19. 12. 2017.

Available at: <https://www.youtube.com/watch?v=CnPUBp1yFRY>

¹⁴ See Deep Dream generator: <https://deepdreamgenerator.com/>

¹⁵ Benjamin Bratton: The Deep: Learning, Time, Fake, State Ecology. Department of Art and Department of Visual Culture, Goldsmith College. 3th May 2018, 31:43 – 32:33 min.

Available at: <https://www.youtube.com/watch?v=57LCHt1Dgw4>

DEEP LEARNING FROM VASULKAS' VIDEO ARCHIVE

RESEARCH PROJECT

TEAM: JANA HORÁKOVÁ (MASARYK UNIVERSITY), JIŘÍ SCHIMMEL (THE BRNO UNIVERSITY OF TECHNOLOGY), ET AL.

AUTHORS OF THE PRESENTATION: JANA HORÁKOVÁ, PAVEL SIKORA, JAKUB BAJZIK

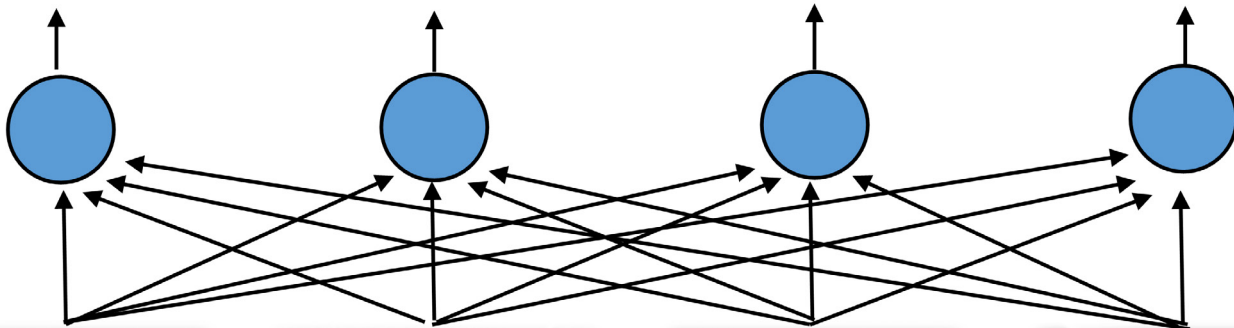
MEDIUM: VIDEO RECORDING OF ARTIFICIAL NEURAL NETWORKS AT WORK

The goal of the project is to experimentally test the utility of artificial neural networks in service of media art historiography and theory. Artificial neural networks conduct iconographic and audiographic analyses of the Woody and Steina Vasulka video archive. We suppose that the application of deep learning technologies in the study of the archive content could serve not only for data mining purposes but, more importantly, it can become a creative means for rethinking the poetics of early electronic art.

The project is introduced by means of three short videos which illustrate different ways of an artificial neural network application to Vasulkas archive.

Application partners of the project are The Vašulka Kitchen Brno – Center for New Media Art and The Brno House of Arts.

The project (TL02000270 Media Art Live Archive) is conducted with financial support from TA ČR. Technological Agency of the Czech Republic.



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<https://www.phil.muni.cz/en/studies/bachelor-degree-study-programme/24621-teorie-interaktivnich-medii>

TIM master's degree study program:

<https://www.phil.muni.cz/en/studies/follow-up-master-s-degree-study-programme/24627-theory-of-interactive-media>

Web:

tim.phil.muni.cz

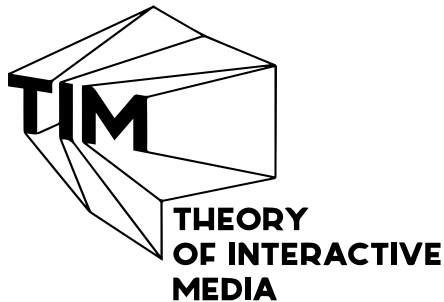
FB: tim.ffmu

Youtube:

Teorie interaktivních médií

JOINME. Journal of Interactive Media <http://joinmephil.muni.cz>

Mail to Jana Horáková (head of the study program): horakova@phil.muni.cz



JANA HORÁKOVÁ ET. AL.

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TIM exhibited @ Ars Electronica Festival 2019

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Math is the New Latin

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Remake Media History!

Filip Johánek:

Aura of Audiography

Jana Horáková, Jiří Mucha:

Computer Graphic Re-visited

Jakub Bajzik, Jana Horáková, Pavel Sikora:

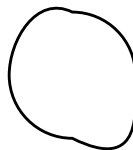
Deep Learning from Vasulka's Video Archive

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