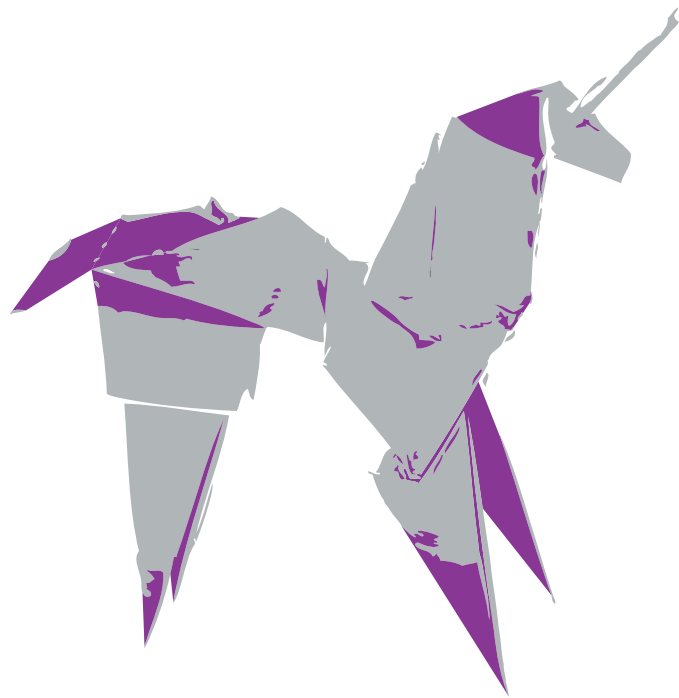


UMETNOST IN ZNANOST
ZA OPOLNOMOČENJE
ART AND SCIENCE TO EMPOWER
SPECULUM ARTIUM
DELAVSKI DOM TRBOVLJE



2017 UMETNOST IN ZNANOST ZA OPOLNOMOČENJE

2017 ART AND SCIENCE TO EMPOWER

V času globalizacije, in s tem povečane zmožnosti interakcije med različnimi principi humanističnih, družbenih in naravoslovnih ved, je tudi znotraj produkcije vizualnih praks prišlo do razcveta, ki je razširil pojma dostopnosti in razumevanja. To je omogočilo vizualnim praksam, da so prevzele odgovorno vlogo vzpostavitve mostu povezovanja različnih principov človeškega delovanja. Umetnost in znanost sta, kot nosilki razvoja sodobne civilizacije, končno združeni v eno; pot nam prekržata vsak dan, na vsakem koraku. Pa vendar nam manjka znanja in vedenja o tem, kaj z novimi pristopi in tehnologijami sploh početi. Povezovanje in sodelovanje različnih znanstvenih disciplin z umetnostjo daje zadnja leta presenetljivo aplikativne rezultate, pisane na kožo potrebam človeka in njegovim aktivnostim.

Umetnost in znanost za opolnomočenje problematizira deviantnost potrošniške družbe in zaslepljenost posameznika – konzumenta. Tudi sodobna vizualna umetniška praksa je močno vpeta v tržni sistem in posledično prevzema formo potrošnega blaga.

Vizualna produkcija, kot umetniška forma, se na začetku 21. stoletja izgublja v neizmerni množici podatkov in informacij, spaja se s tehnologijo ter skupaj z njo projicira ne samo naše, temveč tudi svoje mesto v diseminaciji vsega in vseh med vse in povsod. Pojavlja se potreba po nujni humanizaciji umetnosti in znanosti z namenom olajšati razumevanje neskončne produkcije idej, konceptov in stvari.

DIREKTOR: mag. um. Zoran Poznič
KURATORKI: mag. Maša Jazbec
mag. Špela Pavli Perko

At the time of globalisation, accompanied by the increased possibility of interaction among the various principles of humanistic social sciences and natural sciences, within the production of visual practices also occurred an upswing that expanded the notion of its accessibility and understanding. This enabled visual practices to assume a responsible role of establishing a bridge linking diverse principles of human activities. Art and science are – as bearers of the progress of the contemporary civilization – at last merged into one; we encounter them daily, at our every single step. Nevertheless, we still lack the knowledge and skill of how to employ and what to do with the novel approaches and technologies. Connecting and co-operation of different scientific disciplines with art has, in the recent years, produced a surprising amount of applicable results, well-tailored to our quotidian needs, requirements and activities.

Art and Science to Empower therefore problematizes the deviousness of consumer society and the infatuation of the individual – the consumer. Even the contemporary visual artistic practice is strongly involved in the system of the market which results in its acquisition of a form of a commodity.

At the beginning of the 21st century visual production as an art form is somewhat lost in the vast quantity of data and information, and merged with technology not only produces our, but also its own position in the dissemination of everything and everyone among all and everywhere. The need for an urgent and necessary humanization of art and science has emerged with the goal to simplify the understanding of the incessant production of ideas, concepts and things.

HEAD OF FESTIVAL: Zoran Poznič, M.F.A.
CURATORS: Maša Jazbec, M.A.
Špela Pavli Perko, M.A.

AI DJ PROJECT - A DIALOGUE BETWEEN AI AND A HUMAN

NAO TOKUI (JP), SHOYA DOZONO (JP)

UI DJ Projekt – dialog med UI in človekom je performans v živo, v katerem združita moči človeški in virtualni DJ. Z uporabo tehnologije globoke nevronske mreže sistem umetne inteligence (UI) izbere in zmiksa komade. Zaporedno podajanje in prepletanje njihovih glasbenih intervencij utelešata dialog med človekom in UI skozi glasbo.

Zaporedno UI sistem in človek DJ nastopata v kar najbolj primerljivih pogojih, saj UI drzno uporablja celo fizične vinilne plošče in gramofone. Sistem posluša komade, ki jih predvaja človek DJ, določi tempo, presodi za kateri žanr gre, in nemudoma obdela informacije. Nato sistem UI izbere naslednjo ploščo, le pri polaganju plošče na gramofon potrebuje človeško pomoč.

Včasih UI deluje nepredvidljivo, saj ima sistem UI svojo pamet, tako da se lahko zgodi, da tehno posnetku s hitrim tempom sledi komad v free jazz slogu. Sistem poseduje sebi lastna nagnjenja in ritem, ki je poslušalcem neznan, kar v nastop vneso zabavno napetost.

Umetne inteligence ne bi smeli imeti za imitacijo ali posnemanje ljudi, saj ima logiko, ki je drugačna od človeške. Projekt predstavlja kritično raziskavo specifičnega odnosa med ljudmi in stroji. V performansu je UI partner, ki je sposoben misliti in nastopati ob boku svojega človeškega kolega.

Fotografija: Rakutaro Ogiwara

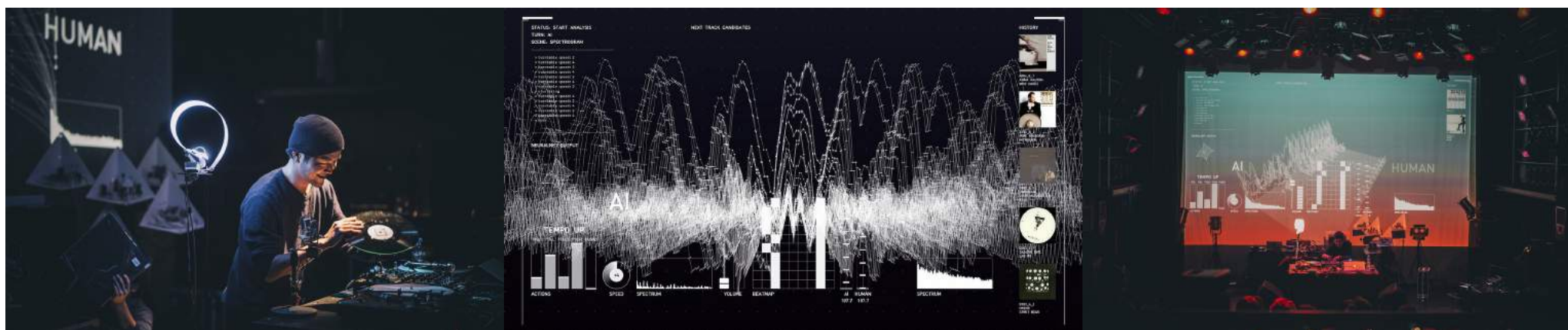
AI DJ Project – A Dialogue between AI and a Human is a live performance featuring an Artificial Intelligence (AI) DJ playing alongside a human DJ. Utilizing deep neural network technology, the AI system selects and mixes songs and performs other musical tasks. Playing back to back, each DJ selects one track at a time, embodying a dialogue between the human and AI through music.

In Back to Back the AI system and a human DJ perform under similar conditions as much as possible. For example, the AI daringly uses physical vinyl records and turntables. The system listens to the tracks played by the human DJ, detects the tempo, judges the genre, and processes the information on the spot. Following this process, the AI chooses the next record to be played; only requiring human assistance to set the new record on the turntable.

Occasionally the AI performs in unexpected ways as the AI system has a mind of its own; a fast tempo techno might be followed by a free jazz track. The system has affinities and rhythm unknown to the audience which brings an amusing tension into the performance.

Artificial Intelligence should not be considered an imitation or emulation of humans, for it possesses logics different to human. The project serves as a critical investigation into the unique relationship between humans and machines. In the performance AI is a partner that is able to think and play alongside its human counterpart.

Photo credit: Rakutaro Ogiwara



OCTOPUS BRAINSTORMING

VICTORIA VESNA (US), MARK COHEN (US), ELI JOTEVA (US)

Hobotnica ima osupljive sposobnosti spreminjanja svoje oblike in barvnih vzorcev. Človeštvo fascinira že tisoče let. V sodobnosti simbolizira temno energijo, ki s svojimi lovkami obvladuje politiko in gospodarstvo. V zadnjih letih nevroznanstveniki, evolucijski biologi, tehnologi in znanstveniki s področja robotike poglobljeno raziskujejo to skrivnostno, mistično bitje.

Octopus Brainstorming je plod sodelovanja dveh principov, umetnosti in znanosti. Avtorji ga razvijajo že pet let. Niz EEG senzorjev, vgrajenih v telo hobotnice, osvetljeno z barvnimi lučmi, obiskovalca popelje v hobotničin magični in duhovni svet. Obredno pokrivalo v obliki hobotnice na ta način simbolizira utelešeno inteligentnost.

Octopus Brainstorming je namenjen vzpostavljanju komunikacije med različnimi biološkimi vrstami, posega na področja vprašanj o ekologiji uma (Bateson). Končni cilj našega brainstorminga s publiko je ideja o raznolikosti in komuniciranju z globalnim jezikom kot tudi ohranjanje in zaščita vrst ter našega planeta.

The octopus has an astonishing ability to change shape, color and form and has fascinated many throughout time – around the world it appeared in myths and stories. It has been used as a symbol of dark energy taking over in politics. But more recently neuroscientists, evolutionary biologists, technologists and roboticists are actively researching this mysterious creature.

Octopus Brainstorming is an art science collaboration that has been evolving over the past five years. The EEG sensor array is embedded into color lit octopus crowns, giving the participants ceremonial presence while at the same time evoking the biological world of an octopus, symbolizing embodied intelligence.

Octopus Brainstorming is also meant as an opening to interspecies communication, as well as issues around ecology of mind as presented by Bateson long ago. Ideas of diversity in global language communication as well as preservation of species and our shared planet is ultimately what we want to brainstorm with the public.

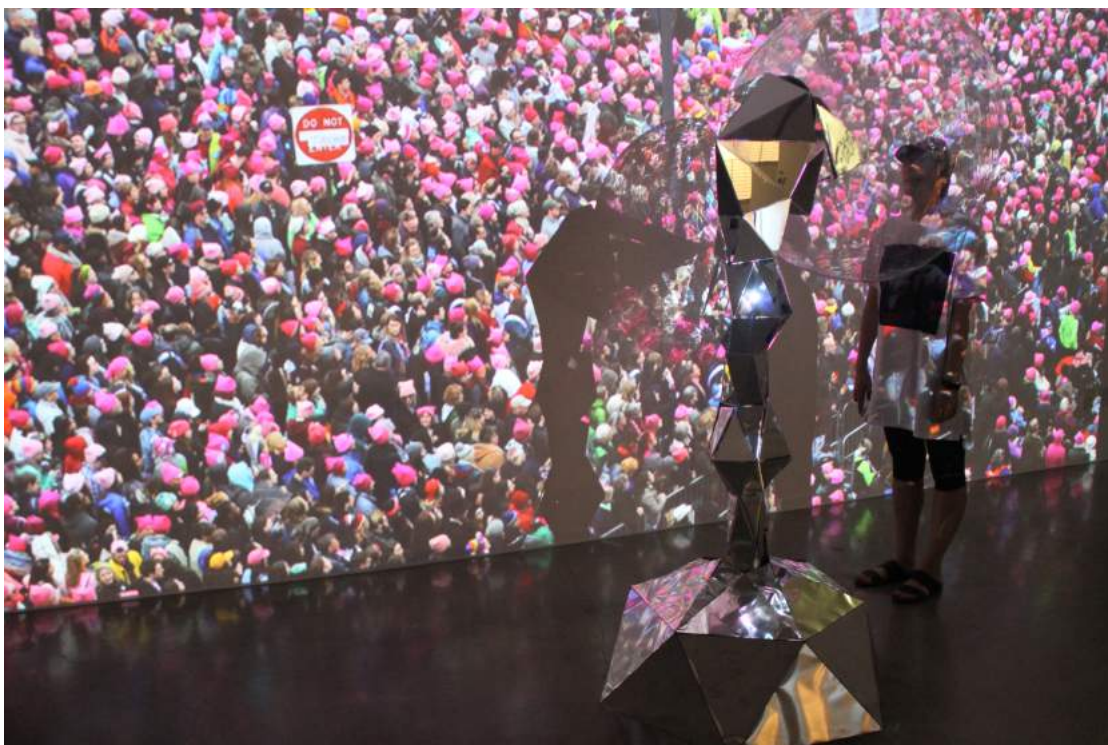


BIRD SONG DIAMOND MIMIC

VICTORIA VESNA (US), CHARLES TAYLOR (US), JOHN BRUMLEY (US), HIROO IWATA (JP), REIJI SUZUKI (JP)

Bird Song Diamond Mimic je interaktivna instalacija, ki omogoča obiskovalcem, da se preizkusijo v ptičjem petju in tako izkusijo kompleksnost učenja novega jezika. Projekt je prilagojen okolju in za Speculum Artium obiskovalce spodbuja, da se učijo in posnemajo petje kanarčka v rovu premogovnika. Ko udeleženci zaslišijo ptičje petje in začnejo oponašati kanarčka, program izmeri in določi približek njihovega posnemanja. Projekt je del obsežnejše instalacije virtualne realnosti in predstavlja širitev raziskovalnega projekta *Mapiranje zvočnega omrežja ptic*, ki ga vodi evlucijski biolog Charles Taylor. V tem delu sta se umetnica in znanstvenik povezala v prizadevanju, da bi opomnila in opozorila javnost na to, da ptice in njihovo zvočno bogastvo izginjajo iz našega vsakdana.

Bird Song Diamond Mimic is an interactive installation that allows the audience to practice bird songs and experience their complexity as if learning a new language. The project is habitat specific and for the Speculum Artium bird song the audience is asked to learn and mimic a canary in the coal mine. When the participants hear the song and are prompted to imitate the canary, a computer grades the accuracy of their mimic. The work is part of a larger virtual reality installation that is an outgrowth of a research project *Mapping the Acoustic Network of Birds* directed by an evolutionary biologist Charles Taylor. Through this work, the artist and the scientist attempt to remind and alert the public of how birds and their acoustic richness have disappeared from our daily experiences.



Kalliplokamos je starogrška, sestavljena beseda, ki pomeni "tisti z lepimi skodranimi lasmi". Interaktivna skulptura je narejena iz jekla, žice, prozorne PVC cevi in mašinerije, ki omogoča kroženje tekočin. Objekt je sestavljen iz dveh glavnih konstrukcij; antropomorfne skulpture, sestavljene iz 1 km dolgih plastičnih cevi, ki vijugajo, vtkane v telesu v obliki mreže notranje telesne geometrije, navdahnjene z obširnimi in kompleksnimi sistemi človeškega organizma: obtočilnim, živčnim in sistemom žlez z notranjim izločanjem. S kroženjem sijajočih tekočin, ki se pretakajo po sistemu, telo prevzema vlogo slikarskega platna, katerega cilj je, da razjasni in prikaže poti kemijskih hormonskih infuzij, ki se ustvarjajo ob doživljanju emocij. Drugi del je mehanizem, v katerem so tekočine, občutljive na UV žarke, in ki povzročajo njihovo pretakanje po telesu s pomočjo vodnih črpalk in zračnih kompresorjev. Gibanje tekočin se iz telesa širi v okoliško arhitekturo. Okolje se napolni z industrijskimi zvoki, ki so potrebni za delovanje *Kalliplokamosa*. Prostor, ki ga zavzema instalacija, se preobrazí v ezoterično okolje, v katerem so gledalci povabljeni k sodelovanju, da bi udeležili idejo popolne transparentnosti. *Kalliplokamos* je skulpturna osebnost; glasna in krhka. Kot človek stoji med drugimi ljudmi v prostoru. Svojo notranjost kaže navzven, a kljub temu spodbuja gledalca k haptičnosti.

Kalliplokamos is an ancient Greek compound word and means "he who has beautiful curly hair". Kalliplokamos is an interactive sculpture made of steel, wire, clear PVC tubing and fluid circulation machinery. The piece is comprised of two main constructions: an anthropomorphic sculpture comprised of one kilometre of PVC tubing, weaved throughout the body in a network of inner body geometries, inspired by the vast and complex systems of the human organism: circulatory, nervous, endocrine system. With the circulation of glowing fluids within them, the body acting as a canvas, aiming to interpret the routes of chemical hormonal infusions generated as emotions that are experienced. The second part is a mechanism that holds the UV sensitive fluids and circulates them through the body with water pumps and air compressors. The fluid motion expands from the body to the surrounding architecture. The environment fills with the industrial sounds needed for Kalliplokamos functions. The installation space becomes an esoteric environment in which the spectators are called to participate, to manifest the idea of total transparency. Kalliplokamos is a sculptural personality, loud and fragile. He stands as a human among others in the installation space. He is open inside out, yet encourages physical contact.



HUMAN STUDY #1, 5RNP / ŠTUDIJA ČLOVEKA #1, 5RNP

PATRICK TRESSET (FR)

Študija človeka #1, 5RNP je instalacija, v kateri človek postane igralec. V prizoru, ki spominja na pouk risanja po živem modelu, obiskovalec prevzame vlogo modela, ki pozira, riše ga 5 robotov. Roboti, stilizirani minimalistični mehanski umetniki, so zmožni le obsesivnega risanja. Vsi se imenujejo Paul-III (a, b, c, d, e) in so si povsem podobni, z izjemo oči, ki so bodisi staromodne digitalne kamere ali spletne kamere nizke resolucije.

Zvoki, ki jih roboti povzročajo, ustvarjajo improvizirano zvočno kuliso. Roboti opravljajo funkcijo, ki jo navadno dojemamo kot delo umetnika, človek pa je zgolj nepremičen objekt.

Projekt je bil razvit z namenom, da ublaži avtorjevo morečo slikarsko blokado. Delo lahko vidimo tudi kot ustvarjalno berglo ali kot psihološki avtoportret. Tudi če način, na katerega robot riše, temelji na avtorjevi tehniki, slog ni imitacija Tresseta, pač pa interpretacija, na katero vplivajo robotove značilnosti.

Roboti Patricka Tresseta so akterji, katerih vedenjski vzorci so bili razviti v obliki računalniških programov, postopoma opredmetenih skozi skiciranje v neskončnem iskanju tiste prave linije. Mehanska telesa nimajo duše, ne duha, pa vendar je njihov namen, da nam predstavijo "človeške zgodbe". Sledi njihove aktivnosti, njihovi gibi, reakcije in odločitve so ohranjeni kot analogni spomini na papirju prek zaporedja nanašanja grafične sledi, ki jo na koncu občutimo kot človeško.

Human Study #1, 5RNP is an installation where the human becomes an actor. In a scene reminiscent of a life drawing class, the human takes the sitter's role to be sketched by 5 robots. The robots, stylised minimal artists, are only capable of drawing obsessively. The robots, named Paul-III. (a, b, c, d, e), all look alike except for their eyes; either obsolete digital cameras, or low-res webcam.

The sounds produced by each robot's motors create an improvised soundtrack. The human sitter is passive, the robots taking what is perceived as the artistic role.

RNP was originally developed by Treset to palliate a debilitating painter's block. It could be seen as a creative prosthetic or a behavioural self-portrait. Even if the way robot draws is based on Treset's technique, its style is not a pastiche of Treset's, but rather an interpretation influenced by the robot's characteristics.

Patrick Treset's robots are actors whose behavioural patterns are developed in the form of computer programs, gradually crafted as a sketch, seeking the right gesture. These mechanical bodies have no soul, no spirit, but they are intended to tell us 'stories of humanity'. The traces of its activity, its movements, reactions and decisions are retained as memories on paper through the accumulation of traits that now feel human.



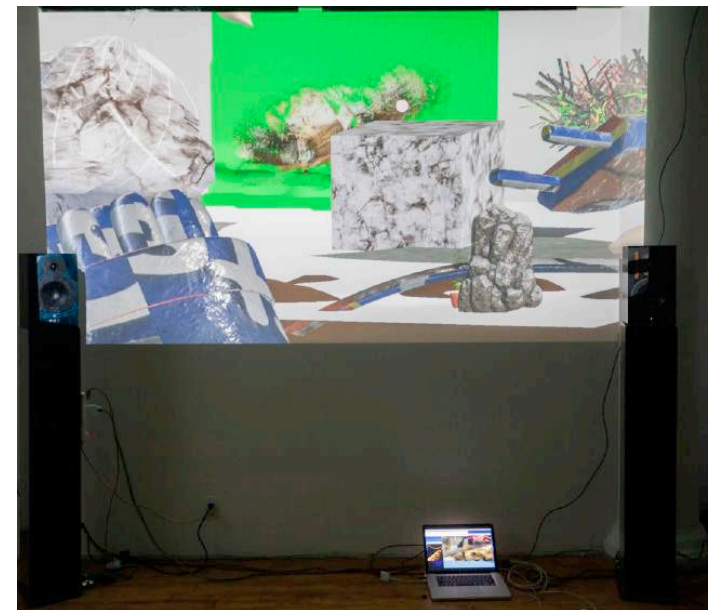
KLAX VAULTS / KLAX TREZOR JOHN BRUMLEY (US), ROY WERNER (US)

Klax trezor je bil na začetku zasnovan kot serija posameznih simuliranih ravnin – totemskih ograjenih vrtov – kjer je vsaka prikazovala nek ekosistem, zapolnjen z namišljenim notranjim delovanjem ustrezne lastniške strojne opreme ali programa. Ti sistemi Črne škatle prikazujejo puste in minimalno aktivne krajine, ki delujejo v medsebojnem nepoznavanju in nezavedanju o zunanjem svetu, ter si prizadevajo, da bi razločneje predstavili nekakšno grobo skico omrežja za medsebojno deljenje fotografij, internetnih platform za prodajo blaga in drugih podobnih digitalnih okolij.

Prek uporabe programskega sistema z 8 zvočnimi in s 3 video kanali projekt obiskovalce potopi v fluidno okolje soočanja digitalnih oken in oken, ki omogočajo pogled v spekulativno algoritmično topografijo avtorjevega notranjega sveta.

Klax Vaults was initially conceived as a series of individual simulated planes – totemic walled gardens – each depicting an ecosystem informed by the imagined inner workings of a respective proprietary hardware or software. These black-box systems display sparse and minimally active landscapes, operating in ignorance of each other and the outside world, attempting to articulate some vague caricature of a photo sharing network, an online platform for selling goods, or other like digital realms.

Through a system of software rendering 8 channels of audio and 3 of video, *Klax Vaults* immerses its audience in a mutable environment of digital windows looking on digital windows, providing a view into Brumley and Werner's speculative algorithmic topography.



ARABESQUE / ARABESKA

PETER WILLIAM HOLDEN (GB)

Arabeska je kinetična umetnina, ki izhaja tako iz zgodbe o Frankensteinu, pisateljice Mary Shelly, kot tudi iz alkimističnega laboratorija. Odlitki delov avtorjevega telesa v naravni velikosti s svojo prosojnostjo kažejo notranje robotske mehanizme navzven. Ožičenje predstavlja estetski izraz, namerno vključen v instalacijo, da s poudarkom na kaotičnih abstraktnih oblikah vzpostavi kontrast s simetričnostjo različnih delov človeškega telesa.

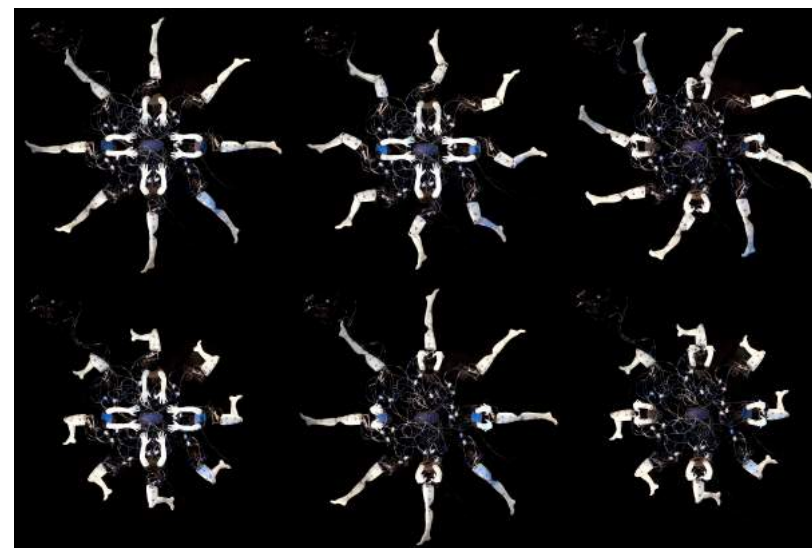
Kinetična instalacija v gibanju tako postane časovna zanka, ki jo gledalec lahko opazuje na več nivojih ter skozi kalejdoskopsko simetrijo vzorcev in oblik spoznava drugačne nivoje kozmične simetrije.

Fotograf: Medial Mirage / Matthias Möller

Arabesque is a kinetic art work with its roots in both Mary Shelly's Frankenstein and the alchemist's laboratory. Life sized cast human body parts (incidentally casts of my own body) with translucent qualities bare their internal robotic mechanisms to the public. The wiring itself is an aesthetic expression deliberately integrated into the installation to bringing chaotic lines of abstract form to contrast with the organized symmetry of the body parts.

Arabesque when in motion becomes a time-based performance and can be viewed from a multitude of angles, revealing a kaleidoscope of beautiful patterns and shapes created from the human form.

Photo credit: Medial Mirage / Matthias Möller



SONOSEIZMIČNA ZEMLJA / SONOSEISMIC EARTH SAŠA SPAČAL (SI), IDA HIRŠENFELDER (SI) - AKSIOMA, KIBLA

Sonoseizmična Zemlja predstavlja Zemljo v dobi antropocena, v kateri se dogajajo motnje v sistemu Zemlje na planetarni ravni. Omogoča vstop v planetarno perspektivo, v čutno in haptično razmerje med človekom in planetom.

Izčrpavanje fosilnih goriv iz zemeljske skorje povzroča tektonske razpoke, zato se v instalaciji v globus zarisujejo raze, ki se stopnjujejo z bližino človeškega bitja. Planet oddaja svarilni infrasonični zvok potresov, ki ga občutljivejša živa bitja prepoznajo kot znak nevarnosti. Človek, ki vstopi v sonoseizmični instrument, se izkustveno ujame v dramo neskončnega kroženja kapitala. Raztopina vode in fosilnih goriv, iztisnjena iz zemeljske oble proizvaja jedek smrad v prostoru in naredi onesnaženje otipljivo za čute. Voda pa se ne bo očistila, kajti postala je del planetarnega presnovnega razkola. Instalacija poskuša strniti učinke industrije s fosilnimi gorivi v izkušnjo ogljikove vojne, ki se bojuje proti vsem življenju na planetu.

The responsive kinetic installation Sonoseismic Earth presents Earth in the age of the Anthropocene; the age that has witnessed disruptions in the Earth's systems on a planetary scale. It makes a possible entry into a planetary perspective, into the sensual and haptic relationship between the human and the planet.

The depletion of fossil fuels in the earth's crust causes tectonic cracks; hence, in the installation, the globe is gradually polluted. The rendering of seismographic shifts intensifies with the proximity of human beings. The planet emits the infrasonic sound of earthquakes, a warning frequency, recognised by the more sensitive beings as a sign of danger. With the acoustic environment humans are caught in the drama of the endless circulation of capital. The installation contains a solution of water and fossil fuels that is squeezed out of the globe and produces a poignant odor, making the pollution tangible for the senses. The water is not cleaned, as it is part of a planetary metabolic rift. Sonoseismic Earth tries to condense the effect of the fossil fuel industry into an experience of carbon war waged against all life forms on the planet.



Zasnova / Concept: Saša Spačal in Ida Hiršenfelder

Strokovna sodelavca / Associate professionals: Mirjan Švagelj, Anil Podgornik

Produkcija in razvoj projekta / Production and development of the artwork: KID Kibla, Maribor, 2015 in Aksioma, Ljubljana, 2017

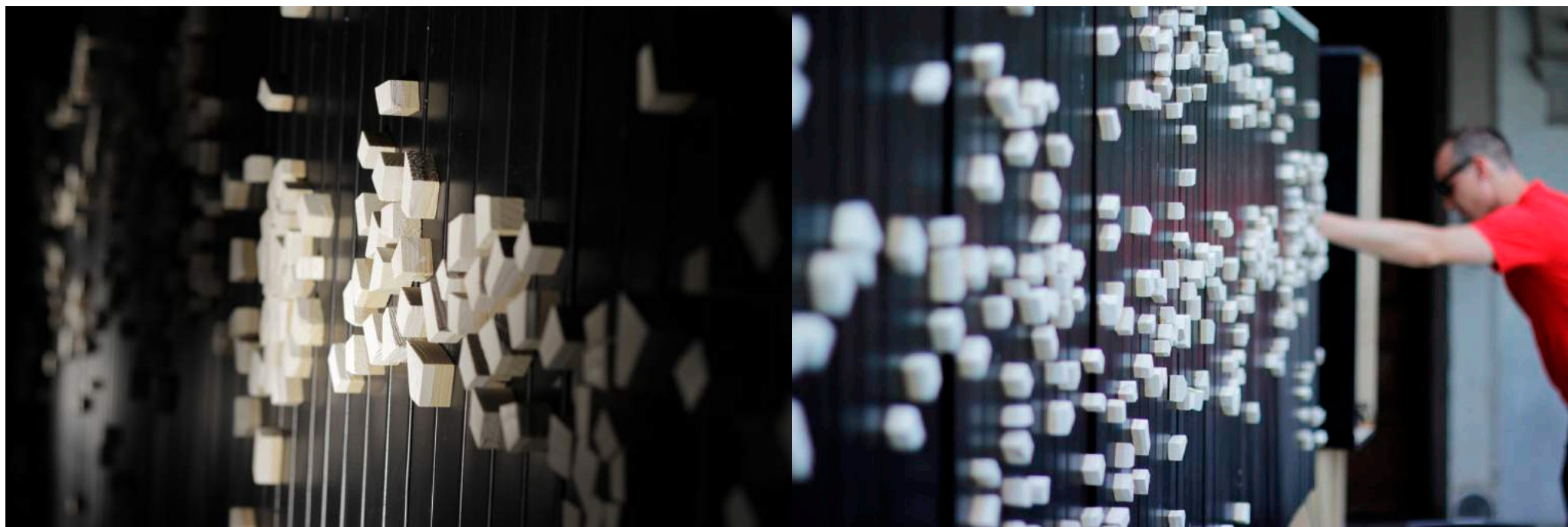
Finančna podpora / Supported by: Ministrstvo za kulturo RS in Mestna občina Ljubljana / the Ministry of Culture of the Republic of Slovenia and the Municipality of Ljubljana

DROBILEC REALNOSTI / REALITY GRINDER

ANDREJ KORUZA (SI), JESUSONECSTASY (SI) - PINA

Mozaik *Drobilec realnosti* problematizira dojemanje realnosti v času prevlade kapitala in neomejenega dostopa do informacij. Instalacija prekoračuje meje in razumevanje mozaika ter ga postavlja v nov kontekst. Ne gre več le za delce in odnose med njimi, temveč tudi za zvoke, ti pa lahko tvorijo jasno ali zapleteno in konfuzno zvočno sliko. Interaktivna instalacija tako ruši temeljne predpostavke ustvarjalnega medija, predvsem njegovo statičnost – opazovalec lahko premika delce v končanem umetniškem delu – in umeščanje v sfero vizualne umetnosti, saj opazovalec s premikanjem delcev oblikuje tako novo vizualno kot zvočno podobo, kar je v polju mozaika prelomno in pionirsko dejanje.

The Reality Grinder mosaic problematizes the perception of reality in the time of capital prevalence and the unlimited access to information. The installation exceeds the borders and understanding of a mosaic and places it in a new context. It no longer concerns only particles and relations among them, but also sounds that can generate a clear or a complex and confusing sound image. The interactive installation hence destroys the basic assumptions of a creative medium, especially its stationariness – the observer can move the particles in the finished artwork – and its placement into the sphere of visual art, as the viewer – by moving the particles – designs a new visual as well as a new sound image, in the field of mosaic a breaking and pioneering act.



Projekt razgrajuje proces nastajanja likovnega dela s pomočjo plastenja različnih informacij. S kibernetičnimi analizami, vzorci premikanja ter matematičnimi algoritmi, kot je Brownian motion, nam projekt odpira polje zaznavanja, ki je sicer gledalcu prikrito. Na premikajočem se prosojnem monitorju se prikazujejo sledi premikanja živih bitij, od krvnih celic, mikroorganizmov, do človeka. Z mehničnim premikanjem ter prosojnostjo analognih ter digitalnih plasti naprava avtomatizirano gradi nove dinamične kompozicije. Premikanje postane jedro likovne uprizoritve, projekt gledalca vodi v živ proces ter v namensko izogibanje končni upodobitvi, po kateri vsi hrepenimo, ko stojimo pred likovnim delom. Projekt uporablja večplastno komponiranje vzorcev premikanja, iz katerih tvori neponovljive avdiovizualne kompozicije. V proces je vključena tudi publika, saj se projekt odziva tudi na prisotnost ljudi v prostoru. Naprava deluje kot nekakšen perpetuum mobile, kar nam daje občutek neskončnih možnosti kompozicij ter ohranja likovno površino v nenehnem nastajanju.

Projekt Modux 3.4 je razvojna faza širše raziskovalne platforme, ki posega na področje znanosti in umetnosti, kjer s pomočjo novih tehnologij razgrajujejo in ponovno sestavljajo proces nastajanja likovnega dela.

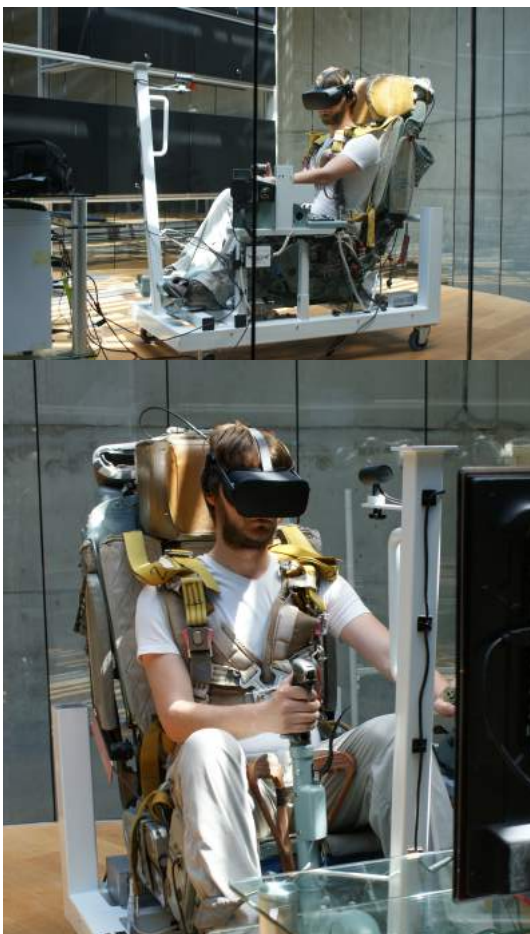
The project decomposes the process of creation of a fine arts artwork by layering various information. With cybernetic analyses, movement patterns and mathematic algorithms such as Brownian motion, the project opens to us a field of perception, otherwise hidden from the observer. On a moving, translucent monitor, there appear trails of movements of living beings; from blood cells, microorganisms to humans. By mechanic moving and the translucency of the analogue and digital layers, the device in an automatized way constructs new dynamic compositions. The moving becomes the core of the visual art performance; the project leads the observer into a living process, and in favour of a deliberate avoidance of a final depiction that everyone longs for, when standing in front of an artwork. The project employs a multi-layered composing of movement patterns wherefrom it generates unrepeatabe audio-visual compositions. The audience is included into the process, as the project also reacts to the presence of

the people in the room. The device functions like a kind of a perpetuum mobile; giving us the feeling of endless possibilities for compositions, while on the fine arts surface an artwork is being created endlessly.

The Modux 3.4 project is a development phase of a wider research platform, reaching into the field of science and art, where aided by new technologies, authors decompose and compose anew the process of creation of a fine arts artwork.



SIMULATOR MIG21 AEREFORM (SI)



Letalski simulator z uporabo VR očal se bistveno razlikuje od vseh ostalih, ker na učinkovit način omogoča premik pogleda pilotu – učencu v celotnem vidnem polju. VR očala točko gledišča spreminjajo glede na položaj glave uporabnika - prilagaja se torej tudi slika. Če pilot fizično obrne glavo v levo, mu tja sledi tudi slika znotraj VR očal. Prvenstveno to odstrani oviranje vidnega polja, ker je vidno polje praktično neomejeno. Zelo pomembno je tudi, da je takšen simulator izjemno imerziven, kar pomeni, da je učna izkušnja prepričljiva in zato močna. Pri učni izkušnji gre za stik vizualnega virtualnega sveta (oči pilota) ter taktilnega fizičnega sveta (dotik, premiki krmil in položaj sedenja v simulatorju). Takšna nenavadna kombinacija izmenjavanja umetnih in naravnih kanalov je za telo in um izjemno psihomotorično prepričljiva in uporabnika med učno izkušnjo zelo zavede ter ga prepričljivo odpelje v drugačen prostor in čas. Opažamo, da po koncu učnega poleta, ko si uporabnik sname VR očala, vedno potrebuje nekaj sekund za prilagajanje nazaj na realnost. Tega v drugih letalskih simulatorjih ni, kar priča o drugačnosti in naprednosti našega izdelka.

Poleg imerzivnosti pa uporaba VR očal omogoča operatorju simulatorja – torej učitelju letenja – da zelo natančno opazuje delo, premike krmil in predvsem razpored pozornosti uporabnika. S tem postane metodika poučevanja lažja in boljša. Še ena bistvena prednost pa je, da se lahko ta simulator uporablja za poučevanje temeljnega letenja, kar pri večini obstoječih letalskih simulatorjev ni mogoče.

The flight simulator employing a VR headset essentially differs from all other simulators as it effectively enables the pilot – candidate a shift of view over the entire visual field. The VR headset adjusts the focal point according to the position of the user's head – therefore the image – adjusts along with it. When the pilot turns his/her head to the left, the image inside the VR headset will follow. This quality primarily eliminates the trouble with the field of view and makes it practically unlimited. It is equally important that this simulator is extraordinary immersive – meaning that the flying session experience is very convincing, hence powerful. Such a lesson is an experience, connecting and combining a visual virtual world (pilot's eyes) and a tactile physical world (touch, controls operation and the sitting posture in the simulator). This uncommon combination and alternation/mixing of artificial and natural channels is extremely psychomotorically credible for the body and the mind as during the session it deceitfully and convincingly takes the user into a different space and time. Our regular observation was that the user, after taking the VR headset off upon the completion of a flying session, needs some seconds to adapt to the everyday reality – an observation not found with other flight simulators – testifying of the differentness and advancement of our product.

Beside its immersiveness the usage of the VR headset enables the simulator's operator – a flight instructor – to monitor the performance, the controls operation and especially the allocation of the candidate's attention, improving the methodics of instructing and making it easier. The last vital advantage of this simulator is that it can be used in basic aircraft piloting instructing/training, which the majority of existing simulators do not allow.

Ko je polje razlage omejeno na enoznačnost, postane pomen tržno blago. S prilasčanjem pomena pa nas vpenjajo v mrežo odvisnosti, tudi po naši zaslugi.

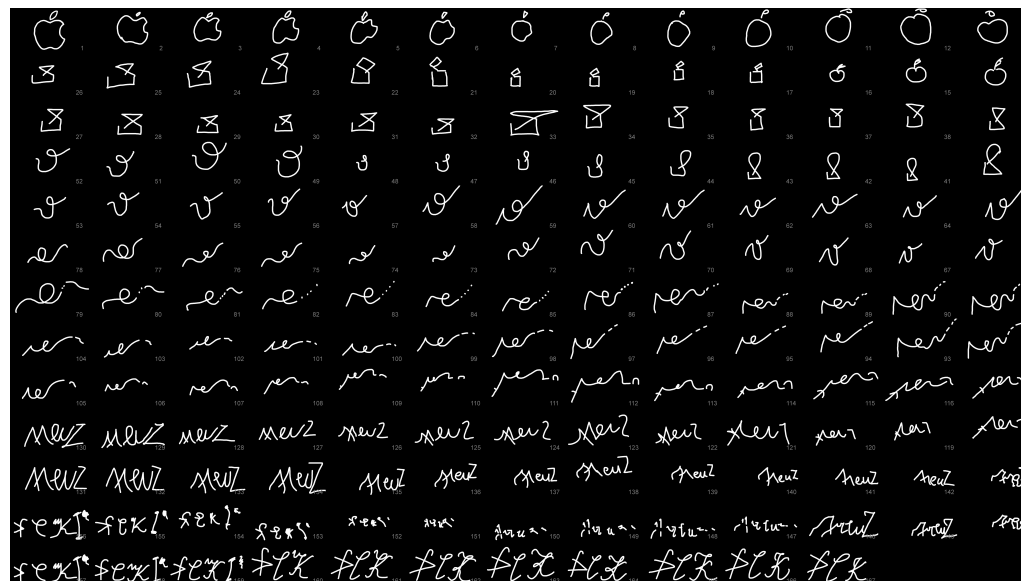
Avtor v želji, da ga množica obkroži, zgolj ponudi označevalec, ki je s tem že postal tudi označenec novega označevalca in tako naprej in naprej z vsakokratno razgradnjo podobe subjekta in njenim nastankom obenem. Ko se veriga prekine, ostane le še poslednja interpretacija. Prvotni pomen je že zdavnaj pozabljen, znak pa prečiščen.

Interpretacije so projekt, ki podobo očisti pomena. Spomni nas, da imamo v svetu (ne)omejene izbire vedno tudi možnost, da si sami izberemo interpretacijo, tako ki nam ni vsiljena, še manj pa servirana kot tržno blago.

Once the field of explanation is limited to unambiguity, meaning becomes a marketable commodity. By appropriating the meaning, they are making us become an inseparable part of a web of dependencies, which is partly our own fault.

In his wish to be surrounded by the mass, the author merely offers the signifier, which through that has already become the signified of another signifier, and so on and so forth, with each decomposition of the subject's image, which is, at the same time, its creation. Once the chain is broken, only the final interpretation remains. The original meaning has long been forgotten, and the air cleared.

Interpretations are a project that frees the image of its meaning. It reminds us that in the world of (un)limited choices we always have the possibility of choosing our own interpretation, one that is not forced upon us, let alone being served to us as a commodity.



ESCAPING CHAIR / BEŽEČI STOL

TAKESHI OOZU (JP) - EMPOWERMENT INFORMATICS, UNIVERSITY OF TSUKUBA

Bežeči stol je naprava, oblikovana kot kos pohištva, ki poskuša zbežati od ljudi v svoji bližini in tako obiskovalcu preprečiti, da bi se usedel nanj. Kljub temu da gre za napravo, za stroj, ki opravlja neko preprosto funkcijo brez svoje volje, pričakujemo, da bo uporabnik ob srečanju z bežečim stolom le-tega prepoznal, ne kot stoj, temveč kot osebo.

The Escaping Chair is a furniture-shaped device that tries to escape from nearby people in order to prevent the subject from sitting down. Although this device is a machine with a simple function, without any will, we expect that the user feels a semblance of will in the device through their interaction with it, and treats it as another "person."



WALKAHOLIC

MINATSU SUGIMOTO (JP)- EMPOWERMENT INFORMATICS, UNIVERSITY OF TSUKUBA



Walkaholic je sistem, ki ljudi preobrazí v električne generatorje, ki spreminjajo svet. Walkaholic ima na sebi zbiralni vmesnik; namesti se ga na gleženj, pri čemer stimulira tudi hojo. Če bi vsi začeli pridobivati energijo z naravnim vedenjem, kot je na primer hoja, bi to pomenilo tektonski premik v smeri ohranjanja planeta.

Walkaholic is a system that turns humans into world-changing power generators. Walkaholic proposes a wearable harvesting interface attachable on the ankle that also stimulates walking. If everyone started to generate energy by natural behaviors such as walking, it could be earth shattering.

VIDENJE NEVIDNEGA, ROSCOFF PROJEKT / SEEING THE UNSEEN, ROSCOFF PROJEKT

MIHA GODEC (SI) - AKADEMIJA UMETNOSTI UNIVERZE V NOVI GORICI / ARTS ACADEMY OF THE UNIVERSITY OF NOVA GORICA

“Zagotovo je naša odgovornost, da naredimo vse, kar je v naši moči, da ustvarimo planet, ki je domovanje ne samo za nas, ampak za vse žive organizme na zemlji.”

Sir David Attenborough

Videnje nevidnega je bio art instalacija, ki uporablja preprosta orodja, lečo luči ali laserja in kamero pametnega telefona, da bi dobili boljši vpogled, razumevanje in ozaveščenost o tem skorajda neznanem, ampak kljub temu zelo posebnem in občutljivem morskem črvu, ki prebiva v simbiozi z algo. Projekt spodbuja k pogledu z nove oziroma drugačne perspektive z namenom širjenja naših obzorji.

Miha Godec o projektu

Predavanje je bilo uvod v razumevanje povezave in konteksta umetnost - znanost - tehnologija s poudarkom na sodelovanju in povezovanju teh dejavnosti v 20. in 21. stoletju.

Delavnica *DIY Mikroskopija* je namenjena opazovanju nevidnega, kakor tudi vzpostavitvi razumevanja morske biologije s konkretnim delom na primeru ekologije morskega habitata in razumevanja hitre spremembe našega okolja s pomočjo izobraževalnega paketa *BIOBOX / Roscoff črv*, ki je bil razvit na Morski biološki postaji v Roscoff-u, Francija.

Robertina Šebjanič o delavnici *Vizija prihodnosti v antropoceni dobi / umetnost & ekologija* (UNG AU v sodelovanju z edicijo *Mi*, festivala *Pixxelpoint 2016*, kuratorica Rene Rusjan)

Akademijo umetnosti Univerze v Novi Gorici letos predstavlja dvojec študenta in gostujoče umetnice-mentorice, Mihe Godca in Robertine Šebjanič. Izbrali smo delo *Videnje nevidnega, Roscoff projekt*, ki izvira neposredno iz študentskih delavnic, ki jih je vodila Robertina Šebjanič v sklopu spremljajočih dogodkov festivala *Pixxelpoint 2016*, na temo *Mi*, v poglavju umetnost - znanost. Kasnejši projekti so še v procesu nastajanja, a nakazujejo odločno zanimanje magistrskega študenta Mihe Godca za vprašanja, ki jih postavlja tudi letošnja festivalska tema, umetnost in znanost za opolnomočenje.

Rene Rusjan o izboru in sodelovanju



“It’s surely our responsibility to do everything within our power to create a planet that provides a home not just for us, but for all life on Earth.” Sir David Attenborough

Roscoff project; seeing the unseen, is a bio-art installation which uses simple tools, cheap laser or light lens and a smartphone camera, to get a better view, understanding and awareness of an unknown but a very special delicate sea worm, who is coexisting with an algae. The project encourages us to view from a new or different perspective in order to broaden our horizons.

Miha Godec about the project

The lecture was an introduction of the connection and the contexts of art – science – technology interaction and collaboration with an emphasis on such activities in the 20th and 21st century.

DIY Microscope was a hands-on workshop on seeing the unseen through the example of ecology of marine life and its habitat, to put into the spotlight the rapid change of our environment by climate change with BIOBOX / Roscoff worm educational kit - initiation

into marine biology - an educational kit designed by the Roscoff Biological Station, France.

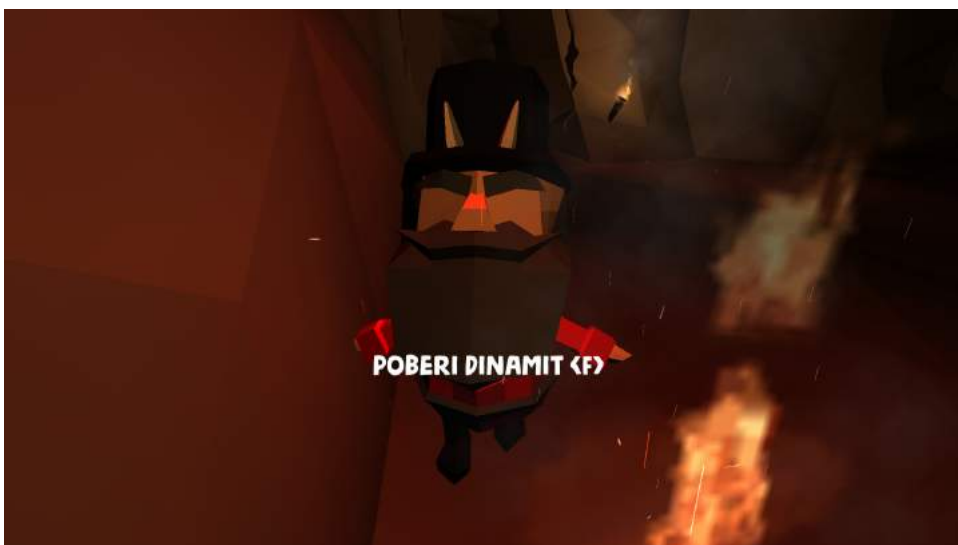
Robertina Šebjanič about the workshop Future Vision of Anthropocene / art & ecology (UNG AU in cooperation with Pixxelpoint 2016 festival, edition We, curator Rene Rusjan)

This year is the Arts Academy of the University of Nova Gorica presenting a tandem of a student and a guest artist-mentor; Miha Godec and Robertina Šebjanič. We have chosen the work entitled Seeing the Unseen, Roscoff project, stemming directly from the students' workshops led by Robertina Šebjanič within the context of the accompanying events of the Pixxelpoint 2016 festival, with the theme We, in the art - science chapter. Subsequent projects are still in the process of creating, nevertheless, they indicate a determined interest of the master's degree student Miha Godec in the issues encompassed by the this year's festival topic; Art and Science to Empower.

Rene Rusjan about the selection and collaboration



RUDARSKÉ RAČUNALNIŠKE IGRE: PERKMANDELJC / MINING COMPUTER GAMES: PERKMANDELJC SREDNJA TEHNIŠKA IN POKLICNA ŠOLA TRBOVLJE (SI)



Dijaka Miha Krajnc in Matej Zečiri sta v okviru strokovnega modula Osnove programiranja, pod mentorstvom dr. Uroša Ocepka in Žiga Podplatnika, izdelala prvoosebno računalniško igro Perkmandeljc. Namen igre je zbežati pred Perkmandeljcem in najti izhod, preden zmanjka kisika. Igra je nadpovprečno delo dijakov - sama sta izdelala 3D grafiko, napisala scenarij, načrtovala fiziko igre in igro v celoti implementirala v okolju Unity. Igra ima nastavke za nadgradnjo z virtualno resničnostjo.

Miha Krajnc and Matej Zečiri, students at the Trbovlje Secondary Technical and Vocational School (STPŠ) have, within the vocational Programming Basics Module, under the mentorship of dr. Uroš Ocepka and Žiga Podplatnik conceived a first-person computer game, named Pekmandeljc. The objective of the game is to escape from Perkmandeljc and find an exit before running out of oxygen. The game represents an outperformance of the students as they created the 3D graphics, wrote the scenario, designed the physics of the game and entirely implemented the game in the Unity environment. The game allows for an upgrade into virtual reality.

ROBOT ODBOJKAR IN VELIKI ROBOT Mk1 / VOLLEYBALL ROBOT AND BIG ROBOT Mk1

HIROO IWATA (JP)

Odbojkarški projekt je sestavljen iz treh robotov, ki posnemajo gibanje vrhunskih odbojkarjev. Vsak robot ima pet stopenj svobode ter izvaja visokohitrostne gibe na vodilih, ki so napeljeni vzporedno z odbojkarško mrežo. Aplikacija trenerjem omogoča nadzorovanje robotov, npr. blokadne gibe, položaj robotov etc. Praktična uporaba tega sistema na treningih na igrišču je potrdila njegovo učinkovitost.

Volleyball project presents a system that consists of three robots that imitate the motion of top volleyball blockers. Each robot has five degrees of freedom and performs high speed movement on rails that are arranged in parallel with the volleyball net. In addition, an application to enable a coach to manipulate these robots was developed. Through practical use the effectiveness of this system was confirmed.



Veliki robot Mk1 uporabniku omogoča, da preizkusi, kako bi hodil, če bi bil 5-metrski velikan, hkrati pa ga začnejo kot velikana dojemati tudi drugi ljudje. Uporabnik stoji na podlagi, ki jo podpirata dve nogi na kolesčkih. Med hojo se podlaga premika naprej na kolesčkih v skladu z gibanjem osebe, gibanje nožnih sklepov pa povzroči nihajoče gibanje.

Big Robot Mk1 was designed with the goals of not only letting the users feel like giants, but also making them appear as walking giants to the surrounding observers as well. Users ride on a base supported by two wheeled legs. As they walk, the base moves forward on its wheels together with their motion, and the movement of the leg joints causes a fluctuating motion.



MREŽA CENTROV RAZISKOVALNIH UMETNOSTI (MCRU)

Mreža centrov raziskovalnih umetnosti je združenje petih centrov raziskovalnih umetnosti v Sloveniji (Kibla, Delavski dom Trbovlje, Kapelica, Pina, KSEVT).

Mreža predstavlja strateško, organsko povezavo partnerjev s skupnim ciljem krepitve področja intermedijskih, in raziskovalnih umetnosti kot pomembnega segmenta kulture, ki v kontekstu digitalne preobrazbe družbe na začetku 21. stoletja predstavlja kulturni potencial, katerega aktivacija bo nujna za uspešno prilagajanje drugih družbenih sistemov (gospodarstvo, izobraževanje, okolje) na nove globalne razmere. Humanizacija tehnologije!

MCRU is network of 5 centers for research art in Slovenia (Kibla, Delavski dom Trbovlje, Kapelica, Pina, KSEVT).

Network represents a strategic, organic association of partners with a common goal of strengthening the field of intermedia and research art as an important part of culture. In the context of digital transformation in the beginning of 21st intermedia art represents cultural potential we need to tap in order to successfully adapt other social systems (economy, education, environment) to new circumstances in a global environment. Humanisation of technology!

UMETNOST-ZNANOST-TEHNOLOGIJA IN DRUŽBA ZA OPOLNOMOČENJE ART-SCIENCE-TECHNOLOGY AND SOCIETY TO EMPOWER

Cilj simpozija Speculum Artium 2017 z naslovom *Umetnost-znanost-tehnologija in družba za opolnomočenje* je, da informira in navdahne širšo javnost s sodobnimi dosežki v tehnologiji, znanosti in posledično tudi v umetnosti, ki niso zgolj nevtralna orodja, temveč dejansko soustvarjajo novo bistvo sodobnega človeka. Umetnost, znanost in tehnologija v današnji družbi predstavljajo kohezivne elemente v povezovanju geneze človeka, saj so – v sintezi – ustvarili temelje za novo kulturo naše vrste. Percepcija produkcije na področju sodobnih, vizualnih, visoko tehnoloških naprednih umetniških praks v svoje pojmovanje vključuje tudi družbeno-znanstvene raziskave o stanju na področju eksistencialnih problematik človeštva kot skupnosti.

Mag. Maša Jazbec

The aim of the Speculum Artium 2017 symposium Art-Science-Technology and Society to Empower is to enlighten a wider public about current advancements in technology, science and consequently in arts, that are not only some neutral tools, but actually co-create the new essence of a contemporary. In our society, art, science and technology represent cohesive elements to the understanding of human genesis, as they – in synthesis – have established a new culture of our species. The perception of production in the field termed contemporary visual, highly technologically-advanced artistic practices also includes socio-scientific researches concerning the situation in the field of existential issues of a human beings as community.

M.A. Maša Jazbec

Gosti / Guests:

Ivan Novak (alias Ivo Saliger) (SI)

Tomo Križnar, Bojana Pivk Križnar (SI)

Zoran Poznič, M.F.A. (SI)

Janez Strehovec, PhD (SI)

James Gimzewski, PhD (US)

Gerfried Stocker (AT)



KOLOFON / CREDITS

Spletna stran / website:

<http://speculumartium.si>

<http://www.tnm.si>

<http://www.dd-trbovlje.si>

Direktor festivala / Head of festival: Zoran Poznič, M.F.A.

Kuratorji / Curators: Maša Jazbec, M.A., Špela Pavli Perko, M.A., Michaela Ortner, M.F.A., Rene Rusjan

Uredila / Edited by: Anja Doležalek Škrabar

Oblikovanje / Design: Društvo TNM

Založil / Published by: Delavski dom Trbovlje, Trg svobode 11a, Trbovlje

DDT direktor / DDT Director: Zoran Poznič, M.F.A.

Vodja programskega sveta / Head of programme board: Zoran Poznič, M.F.A.

Programski svet / Programme board: Maša Jazbec, M.A., Špela Pavli Perko, M.A., Marko Glavač, M.F.A.

Prevod, urejanje besedil / Translations, editing: Andrej Uduč, B.A., Lili Anamarija No

Naklada / Print run: 400

Trbovlje, 2017

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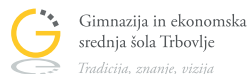
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