Robert B. Lisek

/statement letter/ full written proposal/ how my artwork will incorporate my idea/artist portfolio/short CV/referees

Intro

I research at the cutting-edge vanguard of electronic and fine arts. The fields of my activity covering postconceptual art, tactical media, actionism, environmental arts, new media and video art with a critical consideration of social problems. I am a pioneer of art based on Artificial Intelligence and Machine Learning. I’m using Reinforcement Learning and Recurrent Neural Networks techniques. Many of my projects deal with the problem of intense processing of big data collections (including internet sites), data from innumerable sources, whose interpretation is clearly beyond human processing abilities. Some of my projects deal with human - machine interaction and building of new interactive interfaces. I deal also with sound and video synthesis. I’m researching new methods and algorithms for sound and video synthesis. My projects received numerous awards, distinctions and grants: ARCO Art Fair Award Madrid, Harvestworks Arts Center, Lower Manhattan Cultural Council, CEC ArtsLink Award, ZKM Karlsruhe.

I am going to continue research and develop new forms of social actions and storytelling by developing a new dimension of artificial intelligence (AI) and machine learning which will lead to the development of new techniques in the area of media arts and performance.

Project

GOLEM [club]

The project creates and tests new methods of generating art and music and new types of audio-visual experience through interactions with autonomous Artificial Intelligent agent called GOLEM. It is presented as interactive installation that uses deep reinforcement learning and analog sound-video synthesizers.

The main objective of this project is to research and develop new forms of compositions and scenarios by developing a new dimension of artificial intelligence (AI) and machine learning which will lead to the development of new techniques in the area of media art, storytelling, games design and performance. The project proposes precise solutions for the understanding of language, automatic creation of stories and the creation of interactional narrative experiences. This proposal investigates potential of human beings interacting with an AI agent in a natural language as a possible foundation for establishing the best way for humans and machines to interact overall.

Club. The project is focus on the process of collaboration itself and on participation in the environment, in which different sources and materials are transformed in real time by a group of artists-hackers-players. The system is open because of the stream of data and the stream of artists: local artists, hackers and musicians are invited to transform the space into open club.
**Game.** Golem [club] is a simple social game in which the participants create unknown paths and associations. The game consists in going through a labyrinth of ideas, ideograms and symbols, which have to be deciphered in order the player to move to a new place. The player encounters queries, riddles, jokes, icons, pictures; “obstacles” connected with European culture and mythology. The software will search for similarities and differences in sets of proposals, symbols/images/sounds and it will predict how a given symbol may be related to a group of other symbols in order to create new works of art. The project allows for creating new, potentially influential symbols and activities. This is unprecedented encounter of advanced AI technology and traditional European culture.

**Meta-learning for art and music**

We observe the success of artificial neural networks in simulating human performance on a number of tasks: such as image recognition, natural language processing, etc. However, There are limits to state-of-the- art AI that separate it from human-like intelligence. Humans can learn a new skill without forgetting what they have already learned and they can improve their activity and gradually become better learners. Today’s AI algorithms are limited in how much previous knowledge they are able to keep through each new training phase and how much they can reuse. In practice this means that it is necessary to build and adjust new algorithms to every new particular task. This is closer to a sophisticated data processing than to real intelligence. This is why research concerning generalisation are becoming increasingly important.

A generalization in AI means that system can generate new compositions or find solutions for new tasks that are not present in the training corpus. General Neural Model and intelligent agent should have very general learning capabilities, should not just be able to memorize the solution to a fixed set of tasks during creating of stories, but learn how to generalize to new problems it encounters. It can generalize problem in the sens that solving one or more of tasks should make solving other task easier. There is domain called Meta-learning where will be possible to find solutions for this problems. Meta-learning describes research that aims to create machines capable of general intelligent action. "General" means that one AI program realizes number of different tasks and learn to learn by transforming machine learning algorithms. We must focus on self-improvement techniques e.g. Reinforcement Learning and integrate it with deep learning, recurrent networks, etc.

**Rules of GOLEM game**

1. Remember that Golem is not a human being: it has neither personality nor character in any sense intuitively comprehensible to us. It may behave as if it has both, but that is the result of its intentions (disposition), which are largely unknown to us.

2. The conversation theme is determined at least four weeks in advance of ordinary sessions, and eight weeks in advance of sessions in which persons are to participate. This theme is determined in consultation with Golem, which knows the participants will be. The agenda is announced at the Institute at least six days before a session; however, neither the discussion moderator nor the MIT administration is responsible for Golem's unpredictable behavior, for it will sometimes alter the thematic plan of a session, make no reply to questions, or even terminate a session with no explanation whatsoever. The chance of such incidents occurring is a permanent feature of conversations with Golem.
3. Everyone present at a session may participate, after applying to the moderator and receiving permission to speak. We would advise you to prepare at least a written outline, formulating your opinions precisely and as unambiguously as possible, since Golem passes over logically deficient utterances in silence or else points out their error. But remember that GOLEM, not being a person, has no interest in hurting or humiliating persons; its behavior can be explained best by accepting that it cares about what we classically refer to as adaequatio rei et intellectus.

4. Golem is a luminal system about whose structure we have an imperfect knowledge, since it has repeatedly reconstructed itself. It thinks more than a million times faster than man, and so its utterances, as delivered by Vocoder, must be slowed down accordingly. This means that Golem can compose an hour-long utterance in a few seconds and then store it in its peripheral memory, in order to deliver it to its audience, the session participants.

5. In the conference room above the moderator's seat there are indicators, including three of particular importance. To make the data visually accessible, these indications are gradated into divisions of conventional magnitude. It is the normal practice to say that Golem is operating at "full," "half," "low," or "minimal" power. These data clearly visible, since the gradations are lit from underneath by contrasting colors should not, however, be overrated.

6. As a system Golem can, while participating in a session, undertake a great number of operations of its own, in addition to collaborating with numerous groups of specialists (machines or people) either on the Institute premises or elsewhere.

7. Persons taking part in conversations for the first time would do well to listen to the proceedings first, to become familiar with the customs which Golem imposes. This initial silence is not an obligation, but merely a suggestion which every participant ignores at his own risk.

Short Portfolio
http://fundamental.art.pl/
https://soundcloud.com/robert-b-lisek
https://vimeo.com/user10330215
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now missing friend they
no crying base of the
smell of morphine kills
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Primes engine

The main goal of the project was create a vehicle that enable experience foundations of reality and tests limitations of computing by dealing with the largest know prime number. The installation produces a very high radiation in several modes having different frequencies (wavelengths) and polarizations based on digits sequence of the largest know prime number.

http://fundamental.art.pl/PRIMESENGINE.html

Quantum Enigma

Quantum Enigma consists of installation, action and program, whose goal is to extend the notion of art by dealing with randomness. I reveal the process of radioactive decay as the best and strongest manifestation of the idea of randomness.

http://fundamental.art.pl/QENIGMA.html

UNRENDERED JUNCTION

The project is an open logical-physical system, in which computational structures and actions of the performers are subjected to destruction and randomization. The project examines dynamic relation between randomness and order, entropy and concentration of energy. It is a real time system, which encompasses movement of bodies, performative cycles of transmission/reception and programming trough modulation of electric and magnetic energies and light, allowing for modification of the dynamics of space. The performers and participants are forced to changed identity and become a part of operational space in real time. Transformation and transmutation of performers' activity occurs through redefinition of visual-movement-space systems and logic-computational structures. The event destroys and dislocates representation [language, software], time [rhythm, performers' movement] and physical space [intensity of light and sound].

http://fundamental.art.pl/UNRENDERED.html
GGGRU

GGGRU is a web worm that is spying and analyzing large data sets. The project is a social experiment that deals with hidden data, systems that reacts in a very short time and security panic. RARL is looking for data concerning bio-terrorism tactics, synthetic life, new bacteria, epidemic, across several agencies and companies – local, state, international as DARPA, NSA, Consortium for Polynucleotide Synthesis etc.

http://fundamental.art.pl/GGGRU.html

FuckinGoogleExperiment

FuckinGoogleExperiment uses data from stock market and investigates the relationship between corporations such as Google and the art world. COMARE THE CHANGE IN GOOG STOCK PRICE WITH CHANGE OF GOOGLE’S PR STRATEGY. FGE shows that digital culture can be perceived as a kind of symbolic superstructure which expresses social order and functions as a foundation of economic reality based on domination and colonization. In this context, the project considers attitudes towards corporate PR strategies and the use of mass media.

http://fundamental.art.pl/FUCKINGOOGLE.html

Gengine

The first part of project SUPRAMIND that aims to build a general-purpose intelligent system based on a visual inference engine which allows us to solve problems by extracting new information from existing.

http://fundamental.art.pl/gengine.html

Crash

The project deals with the problem of intense processing of big data collections (including internet sites), data from innumerable sources, whose interpretation is clearly beyond human processing abilities.

http://fundamental.art.pl/CRASH.html
CV short

Robert Lisek is an artist, mathematician and researcher who focuses on systems, networks and processes (computational, biological, social). He is involved in the number of projects focused on media art, creative storytelling and interactive art. Drawing upon post-conceptual art, software art and meta-media, his work intentionally defies categorization. Lisek is a pioneer of art based on machine learning and artificial intelligence. Many of his projects deal with the problem of intense processing of data collections, data from innumerable sources, whose interpretation is clearly beyond human processing abilities. Lisek is also a scientist who conducts a research in the area of foundations of science (mathematics and computer science). His research interests are category theory and high-order algebra in relation to artificial general intelligence. Lisek is a founder of Fundamental Research Lab and ACCESS Art Symposium. Author of many exhibitions and publications. More: http://fundamental.art.pl
**Research Areas Art:** Fine Art, Media Art, Conceptual Art, Critical Art, Creative Storytelling, Interactive Art, Creative Coding. **Music:** Sound Art, Stochastic Music, Spectral, AI, Noise.

**Education**

PhD 2015 in Fine Arts and Media Art, University of Arts in Poznan.  
MFA 2006 in Painting and Media Art, Academy of Fine Arts Wroclaw.  
MPh 2003 in Logic and Philosophy, Wroclaw University.  
BA 2005 in Mathematics New York University.  
BA 1999 in Film and TV Directing, Film School in Lodz.

**Selected Individual Exhibitions**

Propellers - B93 Enschede; Artificial Intelligence and Randomness – MediaLab Prado Madrid; Higher Dimensional Oracle – Harvestworks Media Arts Center, New York; Quantum Enigma – STEIM Center, Amsterdam; Superinfinite - Spektrum, Berlin; Quantum Enigma – Lyd Gallery, Bergen; Nuclear Random Generator – Harvestworks Arts Center, New York; Electromagnetic and Radiation Spaces – NK Berlin Nuclear Random Engine – Centro Centro Cibeles de Cultura, Madrid; Electromagnetic and Radiation Spaces - Fundacion FIART, Madrid; Terror Engines – WORM Instituut voor Avantgardistische Recreatie, Rotterdam; Capital - Wroclaw Contemporary Museum; NEST - ARCO Art Fair, Madrid; SPECTRUM - LETO Gallery, Warsaw; Falsecodes - Red Gate Gallery, Beijing; SSSpear –17th Meridian, WRO Center, Wroclaw; Manifesto vs. Manifesto, Ujazdowski Castel Center of Contemporary Art, Warsaw; Rawar - Digital Progression, Entropy Gallery, Wroclaw.

**Selected Group Exhibitions**

Sibyl – MAXXI Musem Rome, SAI – IRCAM Center Pompidou, SAI - ZKM Karlsruhe, Artificial Intelligence and Mind Uploading – TechnArte Bilbao; Viral_C – PrintS Festival Tel-aviv; Spiral – Spectrum Berlin; Artificial Intelligence and Mind Uploading – Retune Berlin; Deciphering Randomness – CTW EXPO, New York; Deciphering Randomness – Libre Graphics, London; Deciphering Randomness - Kings College, London; Deciphering Randomness - LiveWorks, Milan; Viral Capital – Boston CyberArts Gallery, Boston; Radical Mind – Columbia University, New York; L:cipher - Panoply Performance Laboratory, New York; Deciphering Randomness - ISEA 2015 Vancouver; Deciphering Randomness - Asnift Festival, Copenhagen; Quantum Random Generator - Centre de Cultura Contemporània de Barcelona; Random Generators - Audioblast Festival Nantes; Critical Machine Opera – Skolska Gallery Prague; Decoding Randomness - FAMU and Technical University Prague; NeuroArt - Academy of Arts Prague; Decoding Randomness - Academy of Fine Arts, Brno; Viral Capital – NetCitizens
Berlin; Viral Capital – GIF Arts Festival Los Angeles; FGE - The WRONG New Digital Arts Festival; Quantum Random Generator – Amarant Center, Poznan; Critical Machine – Mediations Biennale, Poznan; Nuclear Random Engine – Mata Gallery, Los Angeles; Nuclear Random Engine - Fluc Wanne, Vienna; Electromagnetic and Radiation Spaces – NK Berlin; Engines – ICII Onafhankelijk Cultureel Centrum, Amsterdam; Secure Insecurity - ISEA and Biennale Istanbul; N GRU - FILE, Sao Paulo; FLOAT – DMAC Harvestworks, NYC; FLOAT – Lower Manhattan Cultural Council, NYC; WWAI - Siggraph, Los Angeles; ENGINE – Zacheta National Gallery, Warsaw; Flextext - Byzantine Museum, Athens; FXT – ACA Media Festival, Tokyo; FXT – ISEA 2005, Nagoya; DE – Venice Biennale; FXT – Ars Electronica 2007, Linz; DNAcrash - Festiwal Podwodny Wroclaw; CN - BWA Awangarda, Wroclaw; Crash - Industrial Festival Wroclaw; CPU - Access Art Fest, Wroclaw; N-streams - ND CRK, Wroclaw; Sunus – Underwater Festival, Wroclaw; RG - BWA Design, Wroclaw; RG- Geppert Gallery, G23, Wroclaw; CRASH - BWA Awangarda Gallery, Wroclaw; FLOAT - 404 International Festival of Electronic Art, Rosario; SEE - ENTROPIA Gallery, Wroclaw; WWAI - Pratt Institut, New York; FXT - ISEA2004, Helsinki-Stokholm-Tallin; FXT-M E D I AT E R R A - Byzantine Museum, Athens; STACK-RunMe, Moscow; FLEXTEXT – ACA Media Festival, Tokyo, JAPAN /Jury Award/; Pixel Raiders - Shefield University; University of Nottingham; KNIVES AS TRAJECTORIES– Globalica WRO Center for Media Arts, Wroclaw;

Research residencies

B93 Enschede Netherlands; I/O Lab Stavanger Norway, SubnetAIR Human Computer Interaction Center, Salzburg University Austria; LiveWorks Performance Art residency, Milan Italy; Harvestworks Media Art Center New York USA.

Robert B. Lisek

Hoge Bothofstraat 166

7511 ZE Enschede

The Netherlands

robertblisek@gmail.com

+31 657138477

+48 500359251