

META-STORY-COMPOSER

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The proposed research uses advanced AI methods (meta-learning) and cutting edge technologies including immersive environments and virtual reality (VR) to offer an innovative, productive contribution to the domain of creative storytelling. Specifically, the project aims to propose a solution for problems linked to the creation of dynamic interactive narratives, specifically the problem of meta-story composing. This refers to the difficulty of designing artificial narrative agent (meta-story-composer) that can respond dynamically and intelligently to evolving complex narrative situations. Meta-Story-Composer is a neural network equipped with the ability to combine concepts and partial narratives in a flexible and combinatorial way to create a new consistent general story. Meta-composer is therefore an intelligent agent that monitors virtual worlds and intervenes in the narrative structure according to the previously trained model. Meta-story-composer creates possible future narrative and dramatic trajectories by combining and generalising previously created substories and selects potentially the most interesting configurations of events. The project is based on meta-learning. Meta-learning describes research that aims to create machines capable of general intelligent actions. "General" in this context means that an AI program realises a number of different tasks and continuously learns to learn by transforming the machine learning algorithms it uses. Recently, meta-learning has evolved into an important topic: researchers are developing new techniques for fast reinforcement learning, neural network optimization, and for finding appropriate network architecture. Significantly expanding existing research, the project designs a new multi-agent dynamic environment, and creates sets of games useful for testing various aspects of meta-story composing protocols.

Robert B. Lisek PhD is an artist, mathematician and composer who focuses on systems, networks and processes (computational, biological, social). He is involved in a 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 Artificial Intelligence and Machine Learning. Lisek is also a composer of contemporary music, author of many projects and scores on the intersection of spectral, stochastic, concret music, musica futurista and noise. Lisek is also a scientist who conducts 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. He is the author of 300 exhibitions and presentations, among others: SIBYL - ZKM Karlsruhe; SIBYL II - IRCAM Center Pompidou; QUANTUM ENIGMA - Harvestworks Center New York and STEIM Amsterdam; TERROR ENGINES - WORM Center Rotterdam, Secure Insecurity - ISEA Istanbul; DEMONS - Venice Biennale (accompanying events); Manifesto vs. Manifesto - Ujazdowski Castel of Contemporary Art, Warsaw; NEST - ARCO Art Fair, Madrid; Float - Lower Manhattan Cultural Council, NYC; WWAI - Siggraph, Los Angeles.