1. Record Nr. UNISA996472070203316

| | |
|---|---|
| Titolo | Artificial intelligence in music, sound, art and design : 11th international conference, EvoMUSART 2022, held as part of EvoStar 2022, Madrid, Spain, April 20-22, 2022, proceedings / / edited by Tiago Martins, Nereida Rodriguez-Fernandez, and Sergio M. Rebelo |
| Pubbl/distr/stampa | Cham, Switzerland : , : Springer, , [2022]<br>©2022 |
| ISBN | 3-031-03789-8 |
| Descrizione fisica | 1 online resource (427 pages) |
| Collana | Lecture Notes in Computer Science ; ; v.13221 |
| Disciplina | 700.28563 |
| Soggetti | Computer graphics<br>Computer music<br>Artificial intelligence |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Nota di bibliografia | Includes bibliographical references and index. |
| Nota di contenuto | Intro -- Preface -- Organization -- Contents -- Long Talks -- SonOpt: Sonifying Bi-objective Population-Based Optimization Algorithms -- 1 Introduction -- 2 Related Work -- 3 Methodology and System Overview -- 4 Experimental Study -- 4.1 Experimental Setup -- 4.2 Experimental Analysis -- 5 Conclusion and Future Work -- References -- A Systematic Evaluation of GPT-2-Based Music Generation -- 1 Introduction -- 2 Background -- 2.1 GPT-2 Models -- 2.2 Representing Music Data for GPT-2 Input -- 2.3 Statistical Analysis of Generative Music Models -- 3 Musical Metrics -- 4 Dataset Curation -- 5 Evaluating Generative Model Output -- 5.1 Varying the Training Level -- 5.2 Varying the Training Corpus -- 6 Web Application -- 7 Conclusions and Future Work -- References -- Expressive Aliens - Laban Effort Factors for Non-anthropomorphic Morphologies -- 1 Introduction -- 2 Background -- 2.1 Movement Qualities -- 2.2 Motion Synthesis -- 2.3 Anthropomorphic versus Non-anthropomorphic Characters -- 2.4 Physical Validity versus Expressivity -- 3 Implementation -- 3.1 Morphologies -- 3.2 SAC Algorithm -- 3.3 Observation Vector -- 3.4 Rewards -- 4 Training -- 5 Results -- 6 |

Discussion -- 7 Conclusion and Outlook -- References -- Painting with Evolutionary Algorithms -- 1 Introduction -- 2 Rearranging Brush Strokes -- 3 Algorithms -- 4 Experiment and Results -- 5 Extrapolation -- 6 Some Final Remarks -- References -- Evolutionary Construction of Stories that Combine Several Plot Lines -- 1 Introduction -- 2 Related Work -- 2.1 Plot Line Combination -- 2.2 Computational Metrics for Stories -- 2.3 Evolutionary Construction of Narratives -- 3 An Evolutionary Multiplot Story Composer -- 3.1 The Knowledge Resources -- 3.2 Character Fusion and Discourse Planning -- 3.3 Representing Multiplot Stories for Evolutionary Construction -- 3.4 Constructing an Initial Population.
3.5 Evolutionary Operators -- 3.6 Fitness Functions -- 4 Discussion -- 4.1 Results -- 4.2 Relation with Previous Work -- 5 Conclusions -- References -- Fashion Style Generation: Evolutionary Search with Gaussian Mixture Models in the Latent Space -- 1 Introduction -- 2 Related Work -- 2.1 GANs -- 2.2 Fashion Styles -- 2.3 Evolutionary Search of GANs' Latent Space -- 3 Dataset -- 4 Model -- 4.1 Generative Model -- 4.2 Style Model -- 4.3 Evolutionary Search -- 5 Results -- 6 Discussion -- 7 Conclusion and Future Work -- References -- Classification of Guitar Effects and Extraction of Their Parameter Settings from Instrument Mixes Using Convolutional Neural Networks -- 1 Introduction -- 2 Method and Materials -- 2.1 Dataset for Guitar Effect Parameter Extraction -- 2.2 Dataset for Guitar Effect Classification -- 2.3 Time-Frequency Representations -- 2.4 Convolutional Neural Networks -- 2.5 Training and Evaluation -- 2.6 Baseline -- 2.7 Robustness Analysis -- 3 Results -- 3.1 Effect Classification -- 3.2 Effect Parameter Extraction -- 3.3 Robustness to Noise and Pitch Shifts -- 4 Discussion -- 4.1 Guitar Effect Classification -- 4.2 Guitar Effect Parameter Extraction -- 4.3 Robustness -- 4.4 Limitations -- 5 Conclusion -- References -- Aesthetic Evaluation of Experimental Stimuli Using Spatial Complexity and Kolmogorov Complexity -- 1 Introduction -- 2 Conceptual Model -- 3 Spatial Complexity Measure -- 4 Kolmogorov Complexity of 2D Patterns -- 5 Experiment and Results -- 5.1 Method -- 5.2 Material -- 5.3 Procedure -- 5.4 Results -- 5.5 Procedure for the Extended Study -- 5.6 Results and Analysis -- 6 Discussions -- References -- Towards the Generation of Musical Explanations with GPT-3 -- 1 Introduction -- 2 Background -- 2.1 Communication in Human-Machine Music Interactions -- 2.2 Transformer-Based Approaches in Music.
2.3 Transformer-Based Approaches in Explainable AI -- 3 Musical Capability of GPT-3 -- 3.1 Extracting the Key from a Sequence of Notes -- 3.2 Providing Explanations for a Fictional Song -- 3.3 Extracting Musical Information Using MusicABC Notation -- 4 Explaining Musical Decisions -- 4.1 Methodology -- 4.2 Results -- 5 Discussion -- 6 Conclusion -- References -- Lamuse: Leveraging Artificial Intelligence for Sparking Inspiration -- 1 Introduction -- 2 The Creative Process -- 2.1 Context -- 2.2 General Assumptions and Process -- 2.3 Data Requirements -- 3 The Artificial Intelligence -- 3.1 Artwork Decomposition -- 3.2 Recomposing with a Visual Universe and Projection -- 3.3 Style Transfer -- 4 Results Analysis and Discussion -- 4.1 E. Potier -- 4.2 Rarès-Victor -- 4.3 N. Varoqui -- 4.4 O. Masmonteil -- 5 Conclusion -- References -- EvoDesigner: Towards Aiding Creativity in Graphic Design -- 1 Introduction -- 2 Related Work -- 3 Approach -- 3.1 Evolutionary Engine -- 4 Experimental Setup and Results -- 5 Conclusion -- References -- Conditional Drums Generation Using Compound Word Representations -- 1 Introduction -- 2 Related Work -- 3 Data Encoding Representation -- 3.1 Encoder Representation - Conditional Information -- 3.2 Decoder

Representation - Generated Drum Sequences -- 4 Proposed Architecture -- 4.1 Encoder - Decoder -- 4.2 Implementation Details -- 5 Experimental Setup -- 5.1 Dataset and Preprocessing -- 5.2 Evaluation Metrics -- 6 Results -- 6.1 Objective Evaluation -- 6.2 Subjective Evaluation -- 7 Conclusions -- References -- Music Style Transfer Using Constant-Q Transform Spectrograms -- 1 Introduction -- 2 Related Work -- 3 Experimental Setup -- 4 Experiments and Results -- 4.1 CycleGAN Hyperparameter Experiment -- 4.2 CQTGAN Sample Rates Experiment -- 4.3 Unseen Audio Examples Experiment -- 5 Survey Evaluation -- 6 Discussion.
7 Conclusions and Future Work -- References -- SpeechTyper: From Speech to Typographic Composition -- 1 Introduction -- 2 Related Work -- 3 SpeechTyper -- 3.1 Extracting Speech Data -- 3.2 Designing Glyphs -- 3.3 Creating Typographic Compositions Based on Speech -- 4 Experimentation -- 4.1 Setup -- 4.2 Results/Discussion -- 5 Conclusion and Future Work -- References -- A Creative Tool for the Musician Combining LSTM and Markov Chains in Max/MSP -- 1 Introduction -- 2 Data Representation -- 2.1 Pitch -- 2.2 Time -- 2.3 MIDI Analyzer -- 3 LSTM Data Encoding -- 3.1 Pitch -- 3.2 Rhythm -- 3.3 Machine Learning Datasets -- 4 Scramble -- 5 User Interface -- 6 Experimental Results -- 7 Conclusions and Future Work -- References -- Translating Emotions from EEG to Visual Arts -- 1 Introduction -- 2 Background and Related Works -- 3 Preparation of Datasets -- 4 Pipeline -- 4.1 Extra Losses -- 5 Experiments and Results -- 5.1 Example Experiment -- 6 Results Assessment: Online Survey -- 7 Discussion -- 8 Conclusions -- References -- Emotion-Driven Interactive Storytelling: Let Me Tell You How to Feel -- 1 Introduction -- 2 Background -- 3 Methodology -- 3.1 Emotion Recognition -- 3.2 Interface Design -- 3.3 System's Assessment -- 4 Results -- 5 Discussion -- 6 Conclusion -- References -- Modern Evolution Strategies for Creativity: Fitting Concrete Images and Abstract Concepts -- 1 Introduction -- 2 Background -- 3 Modern Evolution Strategies for Creativity -- 4 Fitting Concrete Target Image -- 5 Fitting Abstract Concept with CLIP -- 6 Discussion and Conclusion -- References -- Co-creative Product Design with Interactive Evolutionary Algorithms: A Practice-Based Reflection -- 1 Introduction -- 2 Background -- 3 Related Work -- 4 Design Study -- 4.1 Design Task -- 4.2 Study Method -- 4.3 Participant: The Designer -- 4.4 Software Tools and Algorithm.
4.5 Findings: Introspective Design Reflections -- 5 Discussion -- 5.1 Early Constraining of the Design Space -- 5.2 Support in Problem-Solution Co-evolution -- 5.3 Escaping and Falling in a Fixation Trap -- 5.4 The IGA as Creative Partner -- 5.5 Study Limitations -- 6 Conclusion and Future Work -- References -- Sound Model Factory: An Integrated System Architecture for Generative Audio Modelling -- 1 Background and Motivation -- 1.1 Previous Work -- 2 Architecture -- 2.1 System Overview -- 2.2 System Components -- 3 Connecting the GAN and the RNN -- 3.1 Parameter Linearization -- 4 Evaluation -- 4.1 Human Evaluation Adaptively Smoothed Latent Space -- 4.2 Parameter Response Time -- 4.3 Sound Quality Evaluation Based on Audio Classification -- 4.4 Continuous Interpolation of Pitch and Timbre -- 5 Conclusion -- References -- Short Talks -- An Application of Neural Embedding Models for Representing Artistic Periods -- 1 Introduction -- 2 Data -- 3 Methodology -- 3.1 word2vec -- 3.2 t-SNE -- 4 Results -- 4.1 Salvador Dalí -- 4.2 Vincent van Gogh -- 4.3 Pablo Picasso -- 5 Discussion -- 6 Conclusion -- References -- MusIAC: An Extensible Generative Framework for Music Infilling Applications with Multi-level Control -- 1 Introduction -- 2 Related Work -- 3 Proposed Model and

Representation -- 3.1 Adding Control Features -- 3.2 Data Representation -- 3.3 Model Architecture -- 4 Experimental Setup -- 4.1 Dataset -- 4.2 Model Configuration and Training -- 4.3 Inference Strategy -- 5 Evaluation -- 5.1 Objective Evaluation Using Selected Metrics -- 5.2 The Interactive Interface and Controllability -- 6 Conclusion -- References -- A Study on Noise, Complexity, and Audio Aesthetics -- 1 Introduction -- 2 Conceptual over Perceptual -- 2.1 Japanoise -- 3 Complexity -- 3.1 Complexity and Computational Aesthetics -- 4 Proposed Aesthetic Metrics -- 5 Experiment. 6 Discussion.