N. Trubochkina, *ntrubochkina@hse.ru*

Technologies of digital art 8

***Abstract***

***As a digital artist's tools, the following digital imaging technologies were considered in the article: creating abstract images using a neural network without an input image, base don’t he artist's psycho-emotional state; creation of images using a neural network - a stylist, at the entrance of which there is a base image and a stylization file (artist's picture, texture file, another image); technology of soft ware stylization of image processing and technology of fractal visualization. The developed technologies and the described algorithms can be useful for digital artists of such creative areas as: design, graphics, painting, architecture, cinema, VR, light installations.***

***Keywords: digital art, technology, neural network, stylist, base image, soft ware stylization, fractal visualization, design, graphics, painting, architecture, cinema, VR, light installations.***

***References***

1.https://ru.wikipedia.org/wiki/%D0%9A%D0%BE%D0%BC%D0%BF%D1%8C%D1%8E%D1%82%D0%B5%D1%80%D0%BD%D0%BE%D0%B5\_%D0%B8%D1%81%D0%BA%D1%83%D1%81%D1%81%D1%82%D0%B2%D0%BE – Оpredelenie cifrovogo iskusstva.

2. https://www.takefoto.ru/articles/teoriya\_fotografii- Vse o cifrovoj fotografii.

3. http://lib.broadcasting.ru/articles2/Oborandteh/nikanorov - Ivan Nikanorov. Cifrovoj kinematograf.

4. *Seleznev A.E.* Komp'yuternaya grafika v sozdanii hudozhestvennogo obraza v sovremennyh proizvedeniyah iskusstva. Vestnik Vyatskogo gosudarstvennogo universiteta. 2011. 204-207 s.

5. http://www.cablook.com/design-art/iskusstvo-posle-interneta/ - ZHurnal «Iskusstvo posle Interneta».

6. Iskusstvo i tekhnologii: v Tokio predstavlena samaya krupnaya cifrovaya vystavka. https://robo-hunter.com/news/iskusstvo-i-tehnologii-v-tokio-predstavlena-samaya-krupnaya-cifrovaya-vistavka12118/© robo-hunter.com

7. Otkryvaem 3D kinoteatr https://sound-design.kiev.ua/a243668-otkryvaem-kinoteatr-shag.html

8. *Ivanov B.T.* «Novyj vid kino», ZHurnal «Priroda» №5, 1941.

9. *Rozhkov S.N.* «Lavry Kino» Dekabr' 2014 – YAnvar' 2015, s. 75.

10. *V.G. Komar, D.YU. Son, M.S. Semin, V.P. Majorov, S.A. Sabo, S.V. Belyaev, L.M. Balyasnyj, M.I. Krutik, O.A. Lyubich, V.L. Kotlyar, V.E. Lapotenko*. Trekhmernaya mnogorakursnaya bezochkovaya cvetnaya televizionnaya sistema s golograficheskim ehkranom. "VIDEOSKAN". http://videoscan.ru/page/689

11. Gologrammy. Novyj instrument iskusstva. http://axiart.ru/hologram-magic-of-light/

12. *Christina Kretsu*. Kogda gologrammy vojdut v povsednevnuyu zhizn', 2017, https://vc.ru/future/26828-kogda-gologrammy-voydut-v-povsednevnuyu-zhizn

13. https://eightbyten.pro/golograficheskoe-kino/ Golograficheskoe kino. Tekhnologii budushchego iz proshlogo.

14. *Oleg Miheev*. Virtual'naya real'nost' kak novyj vid iskusstva. 2018. https://hype.ru/@id103/virtualnaya-realnost-kak-novyy-vid-iskusstva-lnnybeq4

15. Nejroset' nauchilisozdavat' original'nyeproizvedeniyaiskusstva, 2017. https://nplus1.ru/news/2017/07/05/creative-adversarial-network

16. *Ahmed Elgammal, Bingchen Liu, Mohamed Elhoseiny, Marian Mazzone*. CAN: Creative Adversarial Networks, Generating «Art» by Learning About Stylesand Deviating from Style Norms. Cornell University, 2017. https://arxiv.org/abs/1706.07068

17. Deep Neural Networkを使って画像を好きな画風に変換できるプログラムをChainerで実装し、公開しました。https://research.preferred.jp/2015/09/chainer-gogh/ https://github.com/mattya/chainer-gogh - (kodnejroseti)

18. *Leon A. Gatys, Alexander S. Ecker, Matthias Bethge*. A Neural Algorithm of Artistic Style. arXiv:1508.06576v2 [cs.CV] 2 Sep 2015 https://arxiv.org/pdf/1508.06576.pdf

19. *Trubochkina N.K.* Ot fraktal'nyh dinamicheskih art-ob"ektov k fraktal'nym fil'mam / V kn.: Innovacionnye tekhnologii v kinematografe i obrazovanii. M.: VGIK, 2016. S. 165-176.

20. *Trubochkina N.K.* Tekhnologiya sozdaniya polnometrazhnyh 2D i 3D fil'mov s ispol'zovaniem fraktal'nyh sloyov / Mir tekhniki kino. 2016-4(10). S. 21-29.

21. *Trubochkina N.K., Kondrat'ev N. V.* Perspektivy razvitiya tryohmernogo kino bez ochkov s ispol'zovaniem fraktal'noj grafiki / V kn.: Innovacionnye tekhnologii v kinematografe i obrazovanii: II Mezhdunarodnaya nauchno-prakticheskaya konferenciya, Moskva, 21-25 sentyabrya 2015 g.: Materialy i doklady. — M.: VGIK, 2015. M.: VGIK, 2015. S. 60-69.

22. *Trubochkina N.K., Kondrat'ev N.V.* Sozdanie fraktal'nyh staticheskih i dinamicheskih izobrazhenij dlya avtostereoskopicheskih sistem. / Mir tekhniki kino. 2015-3(9). S. 6-16.

23. *Trubochkina N.K., Lihovceva A.V.* Tekhnologiya fraktal'noj 3D-vizualizacii. / V kn.: Zapis' i vosproizvedenie ob"yomnyh izobrazhenij v kinematografe i drugih oblastyah: VII Mezhdunarodnaya nauchno-prakticheskaya konferenciya, Moskva, 23-25 aprelya 2015. Materialy i doklady. M.: VGIK, 2015. Gl. 11. S. 99-113.

24. *Trubochkina N.K., Lihovceva A.V.* Fraktal'nye graficheskie obrazy – novye vozmozhnosti dlya kino i televideniya / Mir tekhniki kino. 2015-4(9). S. 10-17.

25. http://nadin.miem.edu.ru/article\_001\_04.html stat'i o fraktalah avtora.

26. *Benua B*. *Mandel'brot* «Fraktaly i haos. Mnozhestvo Mandel'brota i drugie chudesa» ISBN: 978-5-93972-772-3. 2009. Izdatel'stvo: Regulyarnaya i haoticheskaya dinamika.

27. http://www.fractalforums.com/index.php?action=downloads- programma Mandelbuld3D.