

4. Casas, J., Cristobal, J. and Luengo, J., 2019. *Motion capture methods and machine learning for sign language recognition* (Bachelor's thesis, NTNU).
5. Shi, B., Rio, A.M.D., Keane, J., Brentari, D., Shakhnarovich, G. and Livescu, K., 2019. Fingerspelling recognition in the wild with iterative visual attention. In *Proceedings of the IEEE International Conference on Computer Vision* (pp. 5400-5409).
6. Chong, T.W. and Lee, B.G., 2018. American sign language recognition using leap motion controller with machine learning approach. *Sensors*, 18(10), p.3554.

Маликайдар С., Тойкенова Ұ.

Ғылыми жетекші: Сарсембаев А.

Ым тілін терендетіп оқыту әдістерімен анықтау

Аңдатпа. Основная цель этой работы - разработать набор методов и техник, включающих глубокое обучение, для создания системы, способной к высокоэффективному распознаванию жестов на языке жестов. В статье краткое исследование среди связанных работ и предложение нашей идеей для оптимизации.

Кілт сөздер: машинное обучение, обучение, тестирование, датасет, язык жестов, алгоритмы

Маликайдар С., Тойкенова У.

Научный руководитель Сарсембаев А.

Распознавание языка жестов с помощью методов глубокого обучения

Аннотация. Основная цель этой работы - разработать набор методов и техник, включающих глубокое обучение, для создания системы, способной к высокоэффективному распознаванию жестов на языке жестов. В статье краткое исследование среди связанных работ и предложение нашей идеей для оптимизации.

Ключевые слова: машинное обучение, обучение, тестирование, датасет, язык жестов, алгоритмы

About authors:

Malikaidar Symbat Iliyaskyzy, student, International Information Technology University.

Toikenova Ulzhan Gumyrbekkyzy, student, International Information Technology University.

Sarsembayev Aidos, PhD, Associate Professor of the Department «Computer engineering and security».

УДК 004

Bokan M., Nurbekkyzy A., Bayanbay A.

International Information Technology University

Almaty, Kazakhstan

Scientific supervisors: Satybaldiyeva R.Zh., Kasymova A.B.

DEVELOPMENT OF A WEB PORTAL PROVIDING EDUCATIONAL AND SOCIAL SERVICES IN THE FIELD OF ANIMATION

Abstract. The article presents the basic concept of developing the user interface and a web portal providing educational and social services in the field of animation. The main requirements and characteristics of a web portal are given, and the direct testing procedure is described using the survey and comparative analysis.

Keywords: Animation, 3D Design, effectiveness, tools, profile, multimedia.

For the past twenty years, the foremost distinguished feature of the technology-based learning atmosphere has become animation. As so much as videos and illustrations are involved, these are motion showing the movement of real objects [1]. 3D animation has become a basis in film, television, and video games, and is changing into an integral part of alternative industries that will not have found it all that helpful initially. Fields like medication, design, law, and even forensics currently use 3D animation.

As expressed by Mayer and Moreno, “animation could be a doubtless powerful tool for multimedia system designers, however its use ought to be supported psychological feature theory and empirical analysis... the longer term of tutorial animations is bright to the extent that its use is target-hunting by cognitive theory and research.” [2]

In this half, we'll enumerate the usage of animation in education:

- 1.To help the learners to check one thing that can't be seen simply within the world [3]
- 2.To assist the users with animated agents [4]
- 3.To illustrate events that aren't inherently visual [5]. Animation clarifies relationships through visual means that [6].

The analysis was have done about the Animation portal. After doing analysiz have been came up that that the animation sphere is not so developed as in foreign countries such as UK, Korea, Japan and so on. However Kazakhstan animation is on the stage of development. Kazakhfilm is now expanding its production of animated films. The new wave of animated films being produced focuses on two themes, folklore and contemporary subjects. The work is supported by the government programme under its Cultural Heritage. In Kazakhstan there is a shortage of professional computer animators. It is not the same as in foreign countries. Even if you browse the web site for only Kazakhstan animators you will find just few materials. We would like to make a website which union two sides. One will provide an opportunity to gain knowledge in this area and find work in good companies. Others find specialists in this field. The main goal of the project is to create a web portal used for a animators and designers. Objectives to achieve:

- comparative analysis of existing solutions;
- definition of requirements, application design;
- create a profile page for users and admin page;
- create a vacation page for companies to post the job vacancies;
- the development of online courses for animators.

For analysis we have divided our target audience into four segments:

1. Men and women between the ages of 18 and 30, artists, who want to create their portfolio, to communicate with fellow artists, who can't find a job or can't go out for office work.
2. Companies working in the industry of games and animation, who are looking for talented employees to work.
3. Men and women between the ages of 16 and 25 who host social media channels are looking for content for their groups.
4. People aged 13 to 30, who are active in social networks and are interested in arts, actively comment and thereby increasing traffic to the site.

For comparative analysis, 5 analogues, training platforms were selected. On the result the best website to get online courses it Edmodo.com. Because only there are you can create the group communities and connect students with the teachers. Because the other sites do not provide the communication between them. You may also create the groups for training. While other websites are related for doing the tasks individually. There is the ability to create quizzes, polls. The similarity with the Coursera.org and Edx.org is that all of them has the rating, giving the awards and badges. Also, in courser and in Edmodo you may upload your documents files. Only two websites give the certificate. The disadvantage of the Edmodo that it doesn't give the certificate. Unlike the above services, Lynda website uses a different payment model. The first month you can use any

educational materials free of charge, to find what you are interested in and look for dinner instead of another base Comedy. But, in the end, you will need to subscribe it.

Table 1.1 Technical characteristics of features

Name	Subject	Certificate	Availability	Lessons	Download?	Upload?	Registration?	Assessments	Rating
Coursera.org	+	+	+	+	-	+	+	+	+
Edx.org	+	-	-	+	+	-	+	+	+
Lynda.com	+	+	+	+	-	-	+	+	-
Udemy.com	+	-	-	+	-	-	+	+	-
Edmodo.com	+	-	+	+	+	+	+	+	-

Today, the 3D design and animating have captured many spheres of it among all over the world. It is popular to solve problems in big companies related to IT. In conclusion of the comparative analysis, we have searched what are the disadvantages and issues within the animators platform in KZ and that we wish to make a web site that helps to them.

REFERENCES

1. Sajid Musa, Rushan Ziatdinov, Carol Griffiths, Introduction to computer animation and its possible educational applications, Catholic University in Ruzomberok, Slovakia: VERBUM, pp.177-205, 2013
2. Mayer, R. E., & Moreno, R. (2002). Animation as an aid to multimedia learning. Educational Psychology Review, 14(1), 87-99
3. Ainsworth, S. How do animations influence learning? In. D. Robinson & G. Schraw (eds.), Current Perspectives on Cognition, Learning and Instruction: Recent Innovations in Educational Technology that Facilitate Student Learning, pp 37-67, Information Age Publishing, UK, 2008
4. Paivio, A. Mental Representations: A Dual Coding Approach, Oxford University Press, Oxford, England, 2000
5. Ainsworth, S. How do animations influence learning? In. D. Robinson & G. Schraw (eds.), Current Perspectives on Cognition, Learning and Instruction: Recent Innovations in Educational Technology that Facilitate Student Learning, pp 37-67, Information Age Publishing, UK, 2008
6. R.E. Weiss et al. . Computers in Human Behavior, 18, 465-477

Бокан М., Нурбеккызы А., Баянбай А.

Научный руководитель: Сатыбалдиева Р.Ж., Касымова А.Б.

Разработка веб-портала, предоставляющего образовательные и социальные услуги в области анимации

Аннотация. В статье представлена основная концепция разработки пользовательского интерфейса и веб-портала, предоставляющего образовательные и социальные услуги в области анимации. Приведены основные требования и характеристики веб-портала, а также описана процедура прямого тестирования с использованием опроса и сравнительного анализа.

Ключевые слова: анимация, 3D-дизайн, эффективность, инструменты, профиль, мультимедиа.

Боқан М., Нұрбекқызы А., Баянбай А.

Ғылыми жетекші: Сатыбалдиева Р.Ж., Касымова А.Б.

Анимация саласында білім беру және әлеуметтік қызметтерді ұсынатын веб-портал әзірлеу

Аңдатпа. Мақалада анимация саласында білім беру және әлеуметтік қызметтерді ұсынатын пайдаланушы интерфейсі мен веб-порталын әзірлеудің негізгі тұжырымдамасы берілген. Веб-порталдың негізгі талаптары мен сипаттамалары келтірілген, сондай-ақ сауалнаманы және салыстырмалы талдауды пайдалана отырып, тікелей тестілеу рәсімі сипатталған.

Кілт сөздер: Анимация, 3D дизайн, тиімділік, құралдар, профиль, мультимедиа

About authors:

Bokan Madina Yerzhankyzy, 4th year student of the International University of information technologies.

Bayanbay Arnur, 4th year student of the International University of information technologies.

Nurbekkyzy Altynnur, 4th year student of the International University of information technologies.

Satybaldyieva Ryskhan Zhakanovna, Associate Professor of the Department "Information systems", candidate of technical Sciences.

УДК 517.958:531.72

Токмухамедова Ф.К.

Международный университет информационных технологий

Алматы, Казахстан

Научные руководители: Нуртас М., Алпар С.Д.

ЧИСЛЕННОЕ РЕШЕНИЕ ПОРОУПРУГОГО ВОЛНОВОГО УРАВНЕНИЯ С ИСПОЛЬЗОВАНИЕМ МЕТОДА КОНЕЧНЫХ ЭЛЕМЕНТОВ

Аннотация. В данной статье исследуется проблема акустики в пористых средах в трех отдельных областях. В каждой области предполагается, что материалы обладают разными физическими свойствами. Геометрия пор, вязкость жидкости располагаются в середине двух упругих областей. В этой задаче сначала рассматривается решение дифференциальных уравнений. Математическая модель этих физических явлений описывается начально-краевыми задачами для сложных систем дифференциальных уравнений в частных производных.

Ключевые слова: математическое моделирование, уравнение акустики, метод конечных элементов, поропругая среда.

Пусть полупространство $\Omega = \{x \in R / x > 0\}$ состоит из трех конечных слоев $\Omega_1 = \{x \in R / 0 < x < H_1\}$, $\Omega_2 = \{x \in R / H_1 < x < H_2\}$, $\Omega_3 = \{x \in R / H_2 < x < H_3\}$ и полубесконечного слоя $\Omega_4 = \{x \in R / x > H_3\}$. Области Ω_1 и Ω_4 являются упругими средами без какой-либо поровой структуры, в то время как области Ω_2 и Ω_3 являются упругими пористыми средами с пористостью m_2 и m_3 соответственно. Поры области Ω_2 заполнены жидкостью 2 (нефть) и поры области Ω_3 заполнены 3 (воды). Будем считать, что твердый скелет областей Ω_2 и