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| **ID Publikace:** | 43871996 |
| **Stav:** | Uložený |
| **Literární forma:** | D\_ČLÁNEK VE SBORNÍKU |
| **Rozšíření LiF:** | D\_Článek ve sborníku |
| **Titul (v originále):** | Simulations of light propagation and thermal response in biological tissues accelerated by graphics processing unit |
| **Rok publikace:** | 2016 |
| **Autor:** | Jakub Měsíček (Prac.: 2900) |
| **Autor:** | Jan Žďárský (Prac.:) |
| **Autor:** | Rafael Doležal (Prac.: 2910) |
| **Autor:** | Ondřej Krejcar (Prac.: 2910) |
| **Autor:** | Kamil Kuča (Prac.: 2910) |
| **Název zdroje:** | 8th International Conference on Computational Collective Intelligence, ICCCI 2016 |
| **Místo publikace:** | Berlin |
| **ISSN:** | 0302-9743 |
| **Strany:** | 242-251 |
| **Abstrakt orig.:** | In this paper we report on a prototype program for laser-tissue interaction simulation accelerated by graphics processing unit (GPU). We developed a Monte Carlo (MC) model for photon migration in arbitrary shaped turbid media which simulates the light flux inside biological tissues to solve the thermal source term in Pennes’ bioheat transfer equation (PBTE). Since both problems are highly parallelizable, we have transformed the underlying mathematical formalism into an OpenCL language code to reduce the computational time-costs. Comparing to sequential implementation, speedup of 210 was achieved in our simulation with GPU. Acceleration benefits are demonstrated separately for MC and PBTE and also for single simulation with both models. The simulation results were obtained in real-time allowing the effective usage in laser interstitial thermal therapy for thermal damage evaluation. |
| **Počet stran:** | 10 |
| **Typ dokumentu:** | JA |
| **Poznámka:** | Scopus - Article, nutno dořešit LiF a zdroj - zde sborník. AT |
| **Hlavní klíč:** | Simulations; light; propagation; and; thermal; response; biological; tissues; accelerated; graphics; processing; unit |
| **Vedlejší klíč:** | Simulations; light; propagation; and; thermal; response; biological; tissues; accelerated; graphics; processing; unit |
| **Jazyk (originál):** | angličtina (eng) |
| **Titul česky:** | Simulations of light propagation and thermal response in biological tissues accelerated by graphics processing unit |
| **Titul anglicky:** | Simulations of light propagation and thermal response in biological tissues accelerated by graphics processing unit |
| **Datum konání:** | 28.09.2016 |
| **Datum vložení:** | 30.10.2016 |
| **Financování:** | S -  |

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| **ID Publikace:** | 43871997 |
| **Stav:** | Uložený |
| **Literární forma:** | D\_ČLÁNEK VE SBORNÍKU |
| **Rozšíření LiF:** | D\_Článek ve sborníku |
| **Titul (v originále):** | Global solar radiation prediction using backward propagation artificial neural network for the city of Addis Ababa, Ethiopia |
| **Rok publikace:** | 2016 |
| **Autor:** | Y. Worki (Prac.:) |
| **Autor:** | E. Berham (Prac.:) |
| **Autor:** | Ondřej Krejcar (Prac.: 2910) |
| **Název zdroje:** | 8th International Conference on Computational Collective Intelligence, ICCCI 2016 |
| **Místo publikace:** | Berlin |
| **ISSN:** | 0302-9743 |
| **Strany:** | 230-238 |
| **Abstrakt orig.:** | Ethiopia is located close to the equatorial belt that receives abundant solar energy. For Ethiopia, to achieve the optimum utilization of solar energy, it is necessary to evaluate the incident solar radiation over the countries of interest. Though, sophisticated and costly equipment are available but they are very limited for developing countries’ like Ethiopia. This paper is therefore tries to explore the use of artificial neural network method for predicting the daily global solar radiation in the horizontal surface using secondary data in the city of Addis Ababa. For this purpose, the meteorological data of 1195 days from one station in Addis Ababa along the years 1985-1987 were used for training testing and validating the model All independent variables (Min and Max Temperature, humidity, sunshine hour and wind speed were normalized and added to the model. Then, Back propagation (BP) Artificial Neural Network (ANN) method was applied for prediction and training respectively to determine the most suitable independent (input) variables. The results obtained by the ANN model were validated with the actual data and error values were found within acceptable limits. The findings of the study show that the Root Mean Square Error (RMSE) is found to be 0.11 and correlation coefficient (R) value was obtained 0.901 during prediction. |
| **Počet stran:** | 9 |
| **Typ dokumentu:** | JB |
| **Poznámka:** | Scopus Document Type - Article, dořešit LiF a zdroj, nyní sborník. AT |
| **Odkazy:** |  |
| **Hlavní klíč:** | Global; solar; radiation; prediction; using; backward; propagation; artificial; neural; network; for; the; city; Addis; Ababa; Ethiopia |
| **Vedlejší klíč:** | Global; solar; radiation; prediction; using; backward; propagation; artificial; neural; network; for; the; city; Addis; Ababa; Ethiopia |
| **Jazyk (originál):** | angličtina (eng) |
| **Titul česky:** | Global solar radiation prediction using backward propagation artificial neural network for the city of Addis Ababa, Ethiopia |
| **Titul anglicky:** | Global solar radiation prediction using backward propagation artificial neural network for the city of Addis Ababa, Ethiopia |
| **Datum konání:** | 28.09.2016 |
| **Datum vložení:** | 30.10.2016 |
| **Financování:** | S -  |

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| **ID Publikace:** | 43871998 |
| **Stav:** | Uložený |
| **Literární forma:** | D\_ČLÁNEK VE SBORNÍKU |
| **Rozšíření LiF:** | D\_Článek ve sborníku |
| **Titul (v originále):** | Novel edge detection scheme in the trinion space for use in medical images with multiple components |
| **Rok publikace:** | 2016 |
| **Autor:** | D. Assefa (Prac.:) |
| **Autor:** | Ondřej Krejcar (Prac.: 2910) |
| **Název zdroje:** | 8th International Conference on Computational Collective Intelligence, ICCCI 2016 |
| **Místo publikace:** | Berlin |
| **ISSN:** | 0302-9743 |
| **Strany:** | 231-241 |
| **Abstrakt orig.:** | Very recently we proposed a promising scheme for tissue classification of multi-parametric magnetic resonance images (MP-MRI) of the brain based on signal analysis in higher dimensional vector spaces. The method treats MP-MR images as colors represented holistically in three (trinion) or four (quaternion) algebraic spaces. Compared to the well known quaternions, the recently proposed three component trinions are more efficient in representation of images with three channels and the respective Fourier transforms allow visualization of their wavenumber spectra as a whole. The current study discusses an edge detection scheme based on statistical metrics derived from locally computed trinion Fourier transforms for use in robust edge detection of MP-MR images and other color medical images. Performance of the proposed scheme is compared against a quaternion formulation and with another vectorial approach. Application of the method is shown in edge detection of various color test images and scenes with different degrees of difficulty. Discussion and preliminary results on the application of the proposed scheme on MP-MR images of brain scans of patients treated for glioblastoma multiforme (GBM) have also been included. |
| **Počet stran:** | 11 |
| **Typ dokumentu:** | JC |
| **Poznámka:** | Scopus - Article, dořešit LiF - zde sborník s ISSN, ve Scopusu časopis. AT |
| **Hlavní klíč:** | Novel; edge; detection; scheme; the; trinion; space; for; use; medical; images; with; multiple; components |
| **Vedlejší klíč:** | Novel; edge; detection; scheme; the; trinion; space; for; use; medical; images; with; multiple; components |
| **Jazyk (originál):** | angličtina (eng) |
| **Titul česky:** | Novel edge detection scheme in the trinion space for use in medical images with multiple components |
| **Titul anglicky:** | Novel edge detection scheme in the trinion space for use in medical images with multiple components |
| **Datum konání:** | 28.09.2016 |
| **Datum vložení:** | 30.10.2016 |
| **Financování:** | S -  |

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| **ID Publikace:** | 43871999 |
| **Stav:** | Uložený |
| **Literární forma:** | D\_ČLÁNEK VE SBORNÍKU |
| **Rozšíření LiF:** | D\_Článek ve sborníku |
| **Titul (v originále):** | Virtual road condition prediction through license plates in 3D simulation |
| **Rok publikace:** | 2016 |
| **Autor:** | Orcan Alpar (Prac.: 2910) |
| **Autor:** | Ondřej Krejcar (Prac.: 2910) |
| **Název zdroje:** | 8th International Conference on Computational Collective Intelligence, ICCCI 2016 |
| **Místo publikace:** | Berlin |
| **ISSN:** | 0302-9743 |
| **Strany:** | 269-278 |
| **Abstrakt orig.:** | Predicting the road conditions lie curves, slopes, hills, helps drivers react faster to avoid possible collisions in hypovigilance and besides, this kind of driver assistance system is more crucial for intelligent vehicles. Even though there are many radar, wifi, infrared systems and devices, what we propose in this paper is a monocular license plate segmentation to foresee the road ahead while cruising behind a blinding vehicle. License plates in the precalibrated images from 3D simulation are segmented and analyzed to identify the front car’s angle of repose. Therefore the angles of the road are estimated frame by frame with calculated distances for prediction of the virtual road. |
| **Počet stran:** | 10 |
| **Typ dokumentu:** | JC |
| **Poznámka:** | Scopus Document Type - Conference Paper. AT |
| **Hlavní klíč:** | Virtual; road; condition; prediction; through; license; plates; simulation |
| **Vedlejší klíč:** | Virtual; road; condition; prediction; through; license; plates; simulation |
| **Jazyk (originál):** | angličtina (eng) |
| **Titul česky:** | Virtual road condition prediction through license plates in 3D simulation |
| **Titul anglicky:** | Virtual road condition prediction through license plates in 3D simulation |
| **Datum konání:** | 28.09.2016 |
| **Datum vložení:** | 30.10.2016 |
| **Financování:** | S -  |

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| **ID Publikace:** | 43872000 |
| **Stav:** | Uložený |
| **Literární forma:** | D\_ČLÁNEK VE SBORNÍKU |
| **Rozšíření LiF:** | D\_Článek ve sborníku |
| **Titul (v originále):** | Dorsal hand recognition through adaptive YCbCr imaging technique |
| **Rok publikace:** | 2016 |
| **Autor:** | Orcan Alpar (Prac.: 2910) |
| **Autor:** | Ondřej Krejcar (Prac.: 2910) |
| **Název zdroje:** | 8th International Conference on Computational Collective Intelligence, ICCCI 2016 |
| **Místo publikace:** | Berlin |
| **ISSN:** | 0302-9743 |
| **Strany:** | 262-270 |
| **Abstrakt orig.:** | Dorsal hand recognition is a trending topic in biometrics and human computer interactive systems. The characteristic and unique shape of the dorsal side of users’ hands could be identified and discriminated for continuous authentication or could be tracked for second security option as a keyboard passwords. Therefore we propose a novel recognition system that deals with users’ hands on the keyboard using adaptive YCbCr color space. The images are extracted from a video recorded by a camera mounted on the monitor and the Cb and the Cr color intervals of the dorsal hands are identified and stored. In contrast with the common algorithms that deal with the static interval, we propose an adaptive system which initially identifies the Cb and Cr values of the users’ hands and subsequently recognize the dorsal hands throughout the frames of the video. |
| **Počet stran:** | 10 |
| **Typ dokumentu:** | JC |
| **Poznámka:** | Scopus - Article, dořešit LiF a zdroj, zde sborník s ISSN, ve Scopusu časopis. AT |
| **Odkazy:** |  |
| **Hlavní klíč:** | Dorsal; hand; recognition; through; adaptive; YCbCr; imaging; technique |
| **Vedlejší klíč:** | Dorsal; hand; recognition; through; adaptive; YCbCr; imaging; technique |
| **Jazyk (originál):** | angličtina (eng) |
| **Titul česky:** | Dorsal hand recognition through adaptive YCbCr imaging technique |
| **Titul anglicky:** | Dorsal hand recognition through adaptive YCbCr imaging technique |
| **Datum konání:** | 28.09.2016 |
| **Datum vložení:** | 30.10.2016 |
| **Financování:** | S -  |

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| **ID Publikace:** | 43872001 |
| **Stav:** | Uložený |
| **Literární forma:** | D\_ČLÁNEK VE SBORNÍKU |
| **Rozšíření LiF:** | D\_Článek ve sborníku |
| **Titul (v originále):** | A smart arduino alarm clock based on NREM and REM sleep stage detection |
| **Rok publikace:** | 2016 |
| **Autor:** | Adam Drábek (Prac.:) |
| **Autor:** | Ondřej Krejcar (Prac.: 2910) |
| **Autor:** | Kamil Kuča (Prac.: 2910) |
| **Název zdroje:** | Mobile web and intelligent information systems (MobiWis 2016) |
| **Místo publikace:** | Berlin |
| **ISSN:** | 0302-9743 |
| **ISBN:** | 978-3-319-44214-3 |
| **Vydavatel:** | Springer |
| **Vydavatel:** | Springer |
| **Strany:** | 431-442 |
| **Abstrakt orig.:** | The article describes a development of a small-budget smart alarm clock, which is based on Arduino platform. A human organism can be found in three basic function stages during a sleep time. Vigilance or a light sleep, NREM sleep and REM sleep. The point of the smart alarm clock is to detect these stages and try to adapt a set alarm and wake a subject up in the best moment possible according to its sleeping cycle, which means during the vigilance or the light sleep. To detect the sleeping stages, the Arduino smart alarm clock uses a movement infra sensor and a noise sensor, which can enable the alarm clock to evaluate the impulses and adjust the set awaking time. For a better functionality the alarm clock is enhanced with a LCD LED display, a real-time clock, a sensor of temperature and humidity and a photosensitive sensor for switching the LED display off in the night. The alarm clock will be ready to use for better and more effective awakening. |
| **Počet stran:** | 11 |
| **Typ dokumentu:** | JB |
| **Poznámka:** | Scopus Document Type - Conference Paper. AT |
| **Hlavní klíč:** | smart; arduino; alarm; clock; based; NREM; and; REM; sleep; stage; detection |
| **Vedlejší klíč:** | smart; arduino; alarm; clock; based; NREM; and; REM; sleep; stage; detection |
| **Jazyk (originál):** | angličtina (eng) |
| **Titul česky:** | A smart arduino alarm clock based on NREM and REM sleep stage detection |
| **Titul anglicky:** | A smart arduino alarm clock based on NREM and REM sleep stage detection |
| **Datum konání:** | 22.08.2016 |
| **Datum vložení:** | 30.10.2016 |
| **Financování:** | S -  |

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| **ID Publikace:** | 43872002 |
| **Stav:** | Uložený |
| **Literární forma:** | D\_ČLÁNEK VE SBORNÍKU |
| **Rozšíření LiF:** | D\_Článek ve sborníku |
| **Titul (v originále):** | Location based services used in smart electronic wallet mobile application |
| **Rok publikace:** | 2016 |
| **Autor:** | Jan Kozlovský (Prac.:) |
| **Autor:** | Jan Dvořák (Prac.: 2910, 2900) |
| **Autor:** | Ondřej Krejcar (Prac.: 2910) |
| **Název zdroje:** | Mobile web and intelligent information systems (MobiWis 2016) |
| **Místo publikace:** | Berlin |
| **ISSN:** | 0302-9743 |
| **ISBN:** | 978-3-319-44214-3 |
| **Vydavatel:** | Springer |
| **Vydavatel:** | Springer |
| **Strany:** | 353-362 |
| **Abstrakt orig.:** | The article deals with the project of electronic wallet that would serve to keep record of personal financial activity, especially for cash payments, which are the most frequent types of transactions in an ordinary life. Smart phone that every person carries around would be used for the evidence of the financial activity, thus it would serve as a wallet. There are many applications that offer keeping record of finances and transactions. This proposed solution has an added value which is the fact that every payment is tied to a location where it was executed. Then, it is possible to group together the different types of financial activity based on the location and also predict them when the user comes back to the same location where a payment has already been made. The users of smart electronic wallet do not have to worry that they will not find their incomes and expenses retrospectively if they forget to enter them into the electronic wallet because it will remind the users to do that. Based on testing of this proposed solution, a relatively high location and suggestion accuracy was reached. Generally speaking, the proposed solution that calls the user to action based on the found location connected to the existing history can be used in a wider area of work, for example, to keep record of tasks and other events of normal life. |
| **Počet stran:** | 10 |
| **Typ dokumentu:** | JC |
| **Poznámka:** | DOI opraveno dle DOI uvedeného ve Scopusu (původně 10.1007/978-3-319-44215-0\_36 - jiný článek).Scopus Document Type - Conference Paper. AT |
| **Odkazy:** |  |
| **Hlavní klíč:** | Location; based; services; used; smart; electronic; wallet; mobile; application |
| **Vedlejší klíč:** | Location; based; services; used; smart; electronic; wallet; mobile; application |
| **Jazyk (originál):** | angličtina (eng) |
| **Titul česky:** | Location based services used in smart electronic wallet mobile application |
| **Titul anglicky:** | Location based services used in smart electronic wallet mobile application |
| **Datum konání:** | 22.08.2016 |
| **Datum vložení:** | 30.10.2016 |
| **Financování:** | S -  |

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| **ID Publikace:** | 43872004 |
| **Stav:** | Uložený |
| **Literární forma:** | D\_ČLÁNEK VE SBORNÍKU |
| **Rozšíření LiF:** | D\_Článek ve sborníku |
| **Titul (v originále):** | Ringtone adaptation based on location and surrounding noise |
| **Rok publikace:** | 2016 |
| **Autor:** | Petr Mervart (Prac.:) |
| **Autor:** | Jan Dvořák (Prac.: 2900, 2910) |
| **Autor:** | Ondřej Krejcar (Prac.: 2910) |
| **Název zdroje:** | Mobile web and intelligent information systems (MobiWis 2016) |
| **Místo publikace:** | Berlin |
| **ISSN:** | 0302-9743 |
| **ISBN:** | 978-3-319-44214-3 |
| **Vydavatel:** | Springer |
| **Vydavatel:** | Springer |
| **Strany:** | 43-55 |
| **Abstrakt orig.:** | Although smart phones have many different functions nowadays, their primary function is calling. To answer calls successfully, ringtones are essential. The aim of this project is to create an application that would enable automatic adaptation of the ringtone to certain situations. The main task of the application will be adjusting the ringing based on the location of the phone. According to predefined locations set by the user, the application will change the ringtone based on where it is currently. The second task of the application will be adjusting the volume of the ringtone if the phone appears in a very noisy environment, so that it would minimize a chance that the incoming call would be overheard. |
| **Počet stran:** | 13 |
| **Typ dokumentu:** | JC |
| **Poznámka:** | Scopus Document Type - Conference Paper. AT |
| **Odkazy:** |  |
| **Hlavní klíč:** | Ringtone; adaptation; based; location; and; surrounding; noise |
| **Vedlejší klíč:** | Ringtone; adaptation; based; location; and; surrounding; noise |
| **Jazyk (originál):** | angličtina (eng) |
| **Titul česky:** | Ringtone adaptation based on location and surrounding noise |
| **Titul anglicky:** | Ringtone adaptation based on location and surrounding noise |
| **Datum konání:** | 22.08.2016 |
| **Datum vložení:** | 30.10.2016 |
| **Financování:** | S -  |

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| **ID Publikace:** | 43872005 |
| **Stav:** | Uložený |
| **Literární forma:** | D\_ČLÁNEK VE SBORNÍKU |
| **Rozšíření LiF:** | D\_Článek ve sborníku |
| **Titul (v originále):** | Document Smart automatic control of gsm alarm |
| **Rok publikace:** | 2016 |
| **Autor:** | Lukáš Veselka (Prac.:) |
| **Autor:** | Jan Dvořák (Prac.: 2910, 2900) |
| **Autor:** | Ondřej Krejcar (Prac.: 2910) |
| **Název zdroje:** | Mobile web and intelligent information systems (MobiWis 2016) |
| **Místo publikace:** | Berlin |
| **ISSN:** | 0302-9743 |
| **ISBN:** | 978-3-319-44214-3 |
| **Vydavatel:** | Springer |
| **Vydavatel:** | Springer |
| **Strany:** | 363-375 |
| **Abstrakt orig.:** | This paper concerns with possibilities of automatic control of GSM alarms using a known location. It provides a compact look on an issue of input and output notification from a circle area identified by a given point and a radius. Consequently it describes a progress of an application for Android platform, which solves this problematic. It contains as well a comparison of the new solution with other mobile platforms and their deficits. The paper also mentions certain competition applications for Android platform and their interrelated comparison. |
| **Počet stran:** | 13 |
| **Typ dokumentu:** | JC |
| **Poznámka:** | K 7.12.16 není ve světových databázích. AT |
| **Hlavní klíč:** | Document Smart; automatic; control; gsm; alarm |
| **Vedlejší klíč:** | Document Smart; automatic; control; gsm; alarm |
| **Jazyk (originál):** | angličtina (eng) |
| **Titul česky:** | Document Smart automatic control of gsm alarm |
| **Titul anglicky:** | Document Smart automatic control of gsm alarm |
| **Datum konání:** | 22.08.2016 |
| **Datum vložení:** | 30.10.2016 |
| **Financování:** | S -  |

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| **ID Publikace:** | 43872006 |
| **Stav:** | Uložený |
| **Literární forma:** | D\_ČLÁNEK VE SBORNÍKU |
| **Rozšíření LiF:** | D\_Článek ve sborníku |
| **Titul (v originále):** | Face-based difficulty adjustment for the game five in a row |
| **Rok publikace:** | 2016 |
| **Autor:** | Jan Novotný (Prac.:) |
| **Autor:** | Jan Dvořák (Prac.: 2910, 2900) |
| **Autor:** | Ondřej Krejcar (Prac.: 2910) |
| **Název zdroje:** | Mobile web and intelligent information systems (MobiWis 2016) |
| **Místo publikace:** | Berlin |
| **ISBN:** | 978-3-319-44214-3 |
| **Vydavatel:** | Springer |
| **Vydavatel:** | Springer |
| **Strany:** | 121-134 |
| **Abstrakt orig.:** | History of the logic games like chess, checkers or five in a row as is old as humanity itself. Primary goal of these games is to train the human brain with a thinking on the future moves. Idea is that the winner is that one with the most successfully predicted moves. Any help for this goal is more than welcome. In current day there is trend to brings all games to our SmartPhones to fill the free time by a possibility of play at any place anytime. There is a many existing solutions, application and ideas how design graphical user interface of these game applications, where the actual trend is to make an intelligent computer opponent with some intelligence which has no standard (all time same) strategy or starting parts. The goal of this paper is to use some standard algorithms like Minimax or Alpha-Beta with the help of user/player face detection usable for difficulty level adjustment. This is described in whole paper step by step as design as well as implementation issues related to appropriate parts of solution. Face detection is used to indicate meta-info of the player by the help of front camera of SmartPhone. This meta-info as age, sex or mood is evaluated and is taken as input for difficulty adjustment not only at start of every game, and even in every move, what make a playing this game amazing. |
| **Počet stran:** | 14 |
| **Typ dokumentu:** | JC |
| **Poznámka:** | Scopus Document Type - Conference Paper. AT |
| **Odkazy:** |  |
| **Hlavní klíč:** | Face-based; difficulty; adjustment; for; the; game; five; row |
| **Vedlejší klíč:** | Face-based; difficulty; adjustment; for; the; game; five; row |
| **Jazyk (originál):** | angličtina (eng) |
| **Titul česky:** | Face-based difficulty adjustment for the game five in a row |
| **Titul anglicky:** | Face-based difficulty adjustment for the game five in a row |
| **Datum konání:** | 22.08.2016 |
| **Datum vložení:** | 30.10.2016 |
| **Financování:** | S -  |

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| **ID Publikace:** | 43872007 |
| **Stav:** | Uložený |
| **Literární forma:** | D\_ČLÁNEK VE SBORNÍKU |
| **Rozšíření LiF:** | D\_Článek ve sborníku |
| **Titul (v originále):** | User based intelligent adaptation of five in a row game for android based on the data from the front camera |
| **Rok publikace:** | 2016 |
| **Autor:** | Jan Novotný (Prac.:) |
| **Autor:** | Jan Dvořák (Prac.: 2910, 2900) |
| **Autor:** | Ondřej Krejcar (Prac.: 2910) |
| **Název zdroje:** | Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics) |
| **Místo publikace:** | Berlin |
| **ISSN:** | 0302-9743 |
| **ISBN:** | 978-3-319-40620-6 |
| **Strany:** | 133-149 |
| **Abstrakt orig.:** | Playing games on mobile phones is very popular nowadays. Many people prefer logic games such as chess, five in a row, checkers etc. This work aspires to come up with a concept of such game, in which the user will not have to deal with setting the opponent’s difficultness – the application will automatically optimize itself. In order to that it will use a shot acquired by the front camera and suitable algorithms of a computer vision. On the smartphone front camera shots these algorithms are able not only to recognize a human face, but as well to estimate an indication about the particular person (for example age, sex, mood). This work brings the concept and an implementation of the game five in a row for Android mobile platform. The paper suggests an applicable algorithm coming out of a Minimax method with its own evaluating function. To design this function there are utilized genetic algorithms – precisely a tournament selection method. Therefore the result of this work is a concrete algorithm of the opponent in the game five in a row implemented into the Android application, which optimizes itself to the user according to the data from the smartphone front camera. |
| **Počet stran:** | 17 |
| **Typ dokumentu:** | JC |
| **Poznámka:** | Scopus Document Type - Conference Paper. AT |
| **Hlavní klíč:** | User; intelligent; adaptation; five; row; game; for; android; based; data; from; the; front; camera |
| **Vedlejší klíč:** | User; intelligent; adaptation; five; row; game; for; android; based; data; from; the; front; camera |
| **Jazyk (originál):** | angličtina (eng) |
| **Titul česky:** | User based intelligent adaptation of five in a row game for android based on the data from the front camera |
| **Titul anglicky:** | User based intelligent adaptation of five in a row game for android based on the data from the front camera |
| **Datum konání:** | 15.06.2016 |
| **Datum vložení:** | 30.10.2016 |
| **Financování:** | S -  |

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| **ID Publikace:** | 43872009 |
| **Stav:** | Uložený |
| **Literární forma:** | D\_ČLÁNEK VE SBORNÍKU |
| **Rozšíření LiF:** | D\_Článek ve sborníku |
| **Titul (v originále):** | Smart solution of alternative energy source for smart houses |
| **Rok publikace:** | 2016 |
| **Autor:** | Jakub Vít (Prac.:) |
| **Autor:** | Ondřej Krejcar (Prac.: 2910) |
| **Název zdroje:** | Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics) |
| **Místo publikace:** | Berlin |
| **ISSN:** | 0302-9743 |
| **ISBN:** | 978-3-319-42006-6 |
| **Strany:** | 830-840 |
| **Abstrakt orig.:** | This paper describes the design and implementation of smart photovoltaic power source. It describes the principle of solar irradiation to energy transformation and influences on its effectiveness, as well as ways to achieve higher energy gain. Based on the operation of the control algorithm the microcontroller-controlled electronics is capable of providing optimal adjustment of the front surface of the panel towards the Sun. It is also capable of measuring the energy balance of the whole device. All individual electronic devices that was built as a products of this project are directly using or are based on Arduino development kit. This work also designs and implements solutions that provide visualization and storage of measured data. Evaluation of the benefit of smart power source in practical operation is performed on the basis of comparison with the measured data obtained from the photovoltaic panel with fixed position. |
| **Počet stran:** | 11 |
| **Typ dokumentu:** | JC |
| **Poznámka:** | Scopus Document Type - Conference Paper. AT |
| **Hlavní klíč:** | Smart; solution; alternative; energy; source; for; smart; houses |
| **Vedlejší klíč:** | Smart; solution; alternative; energy; source; for; smart; houses |
| **Jazyk (originál):** | angličtina (eng) |
| **Titul česky:** | Smart solution of alternative energy source for smart houses |
| **Titul anglicky:** | Smart solution of alternative energy source for smart houses |
| **Datum konání:** | 02.08.2016 |
| **Datum vložení:** | 30.10.2016 |
| **Financování:** | S -  |

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| **ID Publikace:** | 43872010 |
| **Stav:** | Uložený |
| **Literární forma:** | D\_ČLÁNEK VE SBORNÍKU |
| **Rozšíření LiF:** | D\_Článek ve sborníku |
| **Titul (v originále):** | Hidden frequency feature in electronic signatures |
| **Rok publikace:** | 2016 |
| **Autor:** | Orcan Alpar (Prac.: 2910) |
| **Autor:** | Ondřej Krejcar (Prac.: 2910) |
| **Název zdroje:** | Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics) |
| **Místo publikace:** | Berlin |
| **ISSN:** | 0302-9743 |
| **ISBN:** | 978-3-319-42006-6 |
| **Strany:** | 145-156 |
| **Abstrakt orig.:** | Forensics is a science discipline that deals with collecting evidence in crime scene investigation. However if we’re dealing with signatures, the crime scene is the signed paper itself. Therefore, for any kind of investigation, there should be a sample and a master signature to benchmark the similarities and differences. The characteristics of a master signature could easily be identified by forensics techniques, yet it is still infeasible for electronic signatures due to ease of copy-pasting. Through the emerging touchscreen technologies, the features of the signatures could be stealthily extracted and stored while the user is signing. Given these facts, the novelty we put forward in this paper is a feature extraction method using short time Fourier transformations to identify frequencies of a simple master signature. We subsequently presented the spectrogram analysis revealing the differences between the original and fake signatures. Finally a validation method for the analysis of the spectrograms is introduced which resulted in a significant gap between real and fraud signatures for various window sizes. |
| **Počet stran:** | 12 |
| **Typ dokumentu:** | JC |
| **Poznámka:** | Scopus Document Type - Conference Paper. AT |
| **Odkazy:** |  |
| **Hlavní klíč:** | Hidden; frequency; feature; electronic; signatures |
| **Vedlejší klíč:** | Hidden; frequency; feature; electronic; signatures |
| **Jazyk (originál):** | angličtina (eng) |
| **Titul česky:** | Hidden frequency feature in electronic signatures |
| **Titul anglicky:** | Hidden frequency feature in electronic signatures |
| **Datum konání:** | 02.08.2016 |
| **Datum vložení:** | 30.10.2016 |
| **Financování:** | S -  |

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| **ID Publikace:** | 43872011 |
| **Stav:** | Uložený |
| **Literární forma:** | D\_ČLÁNEK VE SBORNÍKU |
| **Rozšíření LiF:** | D\_Článek ve sborníku |
| **Titul (v originále):** | A recent study on hardware accelerated Monte Carlo modeling of light propagation in biological tissues |
| **Rok publikace:** | 2016 |
| **Autor:** | Jakub Měsíček (Prac.: 2900) |
| **Autor:** | Ondřej Krejcar (Prac.: 2910) |
| **Autor:** | Ali Bin Selamat (Prac.: 2910) |
| **Autor:** | Kamil Kuča (Prac.: 2910) |
| **Název zdroje:** | Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics) |
| **Místo publikace:** | Berlin |
| **ISSN:** | 0302-9743 |
| **ISBN:** | 978-3-319-42006-6 |
| **Strany:** | 493-502 |
| **Abstrakt orig.:** | The Monte Carlo (MC) method is the gold standard in photon migration through 3D media with spatially varying optical properties. MC offers excellent accuracy, easy-to-program and straightforward parallelization. In this study we summarize the recent advances in accelerating simulations of light propagation in biological tissues. The systematic literature review method is involved selecting the relevant studies for the research. With this approach research questions regarding the acceleration techniques are formulated and additional selection criteria are applied. The selected studies are analyzed and the research questions are answered. We discovered that there are several possibilities for accelerating the MC code and the CUDA platform is used in more than 60% of all studies. We also discovered that the trend in GPU acceleration with CUDA has continued in last two years. |
| **Počet stran:** | 10 |
| **Typ dokumentu:** | JC |
| **Poznámka:** | Scopus Document Type - Conference Paper. AT |
| **Odkazy:** |  |
| **Hlavní klíč:** | recent; study; hardware; accelerated; Monte; Carlo; modeling; light; propagation; biological; tissues |
| **Vedlejší klíč:** | recent; study; hardware; accelerated; Monte; Carlo; modeling; light; propagation; biological; tissues |
| **Jazyk (originál):** | angličtina (eng) |
| **Titul česky:** | A recent study on hardware accelerated Monte Carlo modeling of light propagation in biological tissues |
| **Titul anglicky:** | A recent study on hardware accelerated Monte Carlo modeling of light propagation in biological tissues |
| **Datum konání:** | 02.08.2016 |
| **Datum vložení:** | 30.10.2016 |
| **Financování:** | S -  |

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| **ID Publikace:** | 43872012 |
| **Stav:** | Uložený |
| **Literární forma:** | D\_ČLÁNEK VE SBORNÍKU |
| **Rozšíření LiF:** | D\_Článek ve sborníku |
| **Titul (v originále):** | A smart Arduino alarm clock using Hypnagogia detection during night |
| **Rok publikace:** | 2016 |
| **Autor:** | Adam Drábek (Prac.:) |
| **Autor:** | Ondřej Krejcar (Prac.: 2910) |
| **Autor:** | Ali Bin Selamat (Prac.: 2910) |
| **Autor:** | Kamil Kuča (Prac.: 2910) |
| **Název zdroje:** | Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics) |
| **Místo publikace:** | Berlin |
| **ISSN:** | 0302-9743 |
| **ISBN:** | 978-3-319-42006-6 |
| **Strany:** | 514-526 |
| **Abstrakt orig.:** | This project describes hardware design and implementation of low-cost smart alarm clock based on Arduino platform, which uses passive infrared sensor (PIR) to detect sleep states of users. Sleep is not just a passive process. People can achieve different states during the night, which are known as Hypnagogia (state from wakefulness to sleep), NREM (non-rapid eye movement), REM (rapid eye movement), Hypnexagogium (awakening state) and dreaming. The main goal for this developed smart alarm clock is to detect these states and adjust alarm time to the best possible moment, when people are in awaking state or in light sleep. Awaking in these states is quite better and people feel much more refreshed. Hardware of this developed alarm clock is composed from LCD LED display, real-time (RTC) clock unit, temperature and humidity sensor, photosensitive module for detection of daytime, touch sensor and WiFi module for time synchronization from NTP (Network Time Protocol) servers. This Smart alarm clock could be used for better and more effective awakening for users. |
| **Počet stran:** | 13 |
| **Typ dokumentu:** | JC |
| **Poznámka:** | Scopus Document Type - Conference Paper. AT |
| **Hlavní klíč:** | smart; Arduino; alarm; clock; using; Hypnagogia; detection; during; night |
| **Vedlejší klíč:** | smart; Arduino; alarm; clock; using; Hypnagogia; detection; during; night |
| **Jazyk (originál):** | angličtina (eng) |
| **Titul česky:** | A smart Arduino alarm clock using Hypnagogia detection during night |
| **Titul anglicky:** | A smart Arduino alarm clock using Hypnagogia detection during night |
| **Datum konání:** | 02.08.2016 |
| **Datum vložení:** | 30.10.2016 |
| **Financování:** | S -  |

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| **ID Publikace:** | 43872013 |
| **Stav:** | Uložený |
| **Literární forma:** | D\_ČLÁNEK VE SBORNÍKU |
| **Rozšíření LiF:** | D\_Článek ve sborníku |
| **Titul (v originále):** | Possibilities for development and use of 3D applications on the android platform |
| **Rok publikace:** | 2016 |
| **Autor:** | Tomáš Marek (Prac.: 2900) |
| **Autor:** | Ondřej Krejcar (Prac.: 2910) |
| **Autor:** | Ali Bin Selamat (Prac.: 2910) |
| **Název zdroje:** | Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics) |
| **Místo publikace:** | Berlin |
| **ISSN:** | 0302-9743 |
| **ISBN:** | 978-3-662-49389-2 |
| **Strany:** | 519-529 |
| **Abstrakt orig.:** | Computer graphics in combination with mobile devices finds many applications in the fields of entertainment, education or displaying data. The amount of information that can be shown to the user in real time depends mostly on the speed of visualisation process and thus on the optimization of the graphic chain during application development. For the development of optimized solution, the developers need to be familiar with the possibilities and differences of the developing platform. An appropriate way can be the implementation of graphics engine and sample scenes that show basic indicators of a quality level of current smart devices. This paper focuses on the problem of selecting a proper graphics engine for selected visualization task as well as the optimization of several most used techniques for visualisation of different types of 3D effects. Quality of the implementation is finally evaluated on the developed testing engine which provides relevant data in the sense of Frame per Second (FPS) based on the visualisation speed. The second aspect of quality is evaluated by the visual correctness of four selected scenes such as water level, volumetric light scattering, fur simulation and forest. |
| **Počet stran:** | 11 |
| **Typ dokumentu:** | JC |
| **Poznámka:** | Scopus Document Type - Conference Paper. AT |
| **Odkazy:** |  |
| **Hlavní klíč:** | Possibilities; for; development; and; use; applications; the; android; platform |
| **Vedlejší klíč:** | Possibilities; for; development; and; use; applications; the; android; platform |
| **Jazyk (originál):** | angličtina (eng) |
| **Titul česky:** | Possibilities for development and use of 3D applications on the android platform |
| **Titul anglicky:** | Possibilities for development and use of 3D applications on the android platform |
| **Datum konání:** | 02.08.2016 |
| **Datum vložení:** | 30.10.2016 |
| **Financování:** | S -  |

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| **ID Publikace:** | 43872014 |
| **Stav:** | Uložený |
| **Literární forma:** | D\_ČLÁNEK VE SBORNÍKU |
| **Rozšíření LiF:** | D\_Článek ve sborníku |
| **Titul (v originále):** | Design and implementation of mobile travel assistant |
| **Rok publikace:** | 2016 |
| **Autor:** | Tomáš Pochobradský (Prac.:) |
| **Autor:** | Tomáš Kozel (Prac.: 2420) |
| **Autor:** | Ondřej Krejcar (Prac.: 2910) |
| **Název zdroje:** | Recent developments in intelligent information and database systems |
| **Místo publikace:** | Berlin |
| **ISSN:** | 1860-949X |
| **ISBN:** | 978-3-319-31276-7 |
| **Vydavatel:** | Springer |
| **Strany:** | 423-432 |
| **Abstrakt orig.:** | Paper deal with a development of application designed for users of the Android operating system. Its main objective is to alert the user to the arrival of the train in a station while the transfers are also taken into account. We use position sensor to determine the exact GPS location. Based on the travelled distance exact approach of speed train to a station is calculated as well as subsequent wake up of user/traveller. Thanks to this fact, application is able to respond to any train delays. Delayed departure of the train from the initial station is also taken into account. The user can choose how many minutes or how many kilometres before the station wants to wake up. |
| **Počet stran:** | 10 |
| **Typ dokumentu:** | IN |
| **Poznámka:** | Pořadí autorů upraveno dle záznamu ve Scopusu. Scopus Document Type - Conference Paper. AT |
| **Odkazy:** | http://link.springer.com/chapter/10.1007%2F978-3-319-31277-4\_40 |
| **Hlavní klíč:** | Design; and; implementation; mobile; travel; assistant |
| **Vedlejší klíč:** | Design; and; implementation; mobile; travel; assistant |
| **Jazyk (originál):** | angličtina (eng) |
| **Titul česky:** | Design and implementation of mobile travel assistant |
| **Titul anglicky:** | Design and implementation of mobile travel assistant |
| **Datum konání:** | 14.03.2016 |
| **Datum vložení:** | 30.10.2016 |
| **Financování:** | S -  |

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| **ID Publikace:** | 43872015 |
| **Stav:** | Uložený |
| **Literární forma:** | D\_ČLÁNEK VE SBORNÍKU |
| **Rozšíření LiF:** | D\_Článek ve sborníku |
| **Titul (v originále):** | Application of artificial neural networks in condition based predictive maintenance |
| **Rok publikace:** | 2016 |
| **Autor:** | Jiří Křenek (Prac.: 2900) |
| **Autor:** | Kamil Kuča (Prac.: 2910) |
| **Autor:** | Pavel Blažek (Prac.: 2900) |
| **Autor:** | Ondřej Krejcar (Prac.: 2910) |
| **Autor:** | Daniel Jůn (Prac.:) |
| **Název zdroje:** | Recent developments in intelligent information and database systems |
| **Místo publikace:** | Berlin |
| **ISSN:** | 1860-949X |
| **ISBN:** | 978-3-319-31276-7 |
| **Vydavatel:** | Springer |
| **Strany:** | 75-86 |
| **Abstrakt orig.:** | This paper reviews different techniques of maintenance, artificial neural networks (ANN) and their various applications in fault risk assessment and an early fault detection analysis. The predictive maintenance is in focus of production facilities supplying in long supplier chains of automotive industry to ensure the reliable and continuous production and on-time deliveries. ANN offer a powerful tool to evaluate machine data and parameters which can learn from process data of fault simulation. Finally there are reviewed examples of usage of ANN in specific predictive maintenance cases. |
| **Počet stran:** | 10 |
| **Typ dokumentu:** | IN |
| **Poznámka:** | Scopus Document Type - Conference Paper. AT |
| **Odkazy:** | http://link.springer.com/chapter/10.1007%2F978-3-319-31277-4\_40 |
| **Hlavní klíč:** | Application; artificial; neural; networks; condition; based; predictive; maintenance |
| **Vedlejší klíč:** | Application; artificial; neural; networks; condition; based; predictive; maintenance |
| **Jazyk (originál):** | angličtina (eng) |
| **Titul česky:** | Application of artificial neural networks in condition based predictive maintenance |
| **Titul anglicky:** | Application of artificial neural networks in condition based predictive maintenance |
| **Datum konání:** | 14.03.2016 |
| **Datum vložení:** | 30.10.2016 |
| **Financování:** | S -  |