2019年度　岩手県立大学　海外の学会における発表論文の概要

Affiliation Title Name 所属・職・氏名	Academic Society 学会名	Country 開催国	Period 会期	Abstract 概要
Center for the Advancement of Higher Education, Professor, Wenjing　Liu-Wuerz 高等教育推進センター 教授 劉　文静	The 5th Hebei(China) International Think Tank Forum 第5回　河北省(中国)シンクタンク国際フォーラム	Shijiazhuang, China 石家荘市 （中国）	2019.5.19 ～5.25	**Title** A Comprehensive Plan and Policy for Regional Development and Rural Society: A Structural Analysis of Iwate's Prefectural Plan **Abstract** This paper is a report on the comprehensive plan and policy for regional development with special emphasis on agriculture and rural society in Iwate which between 1964 and 2009 implemented a series of 9 such plans always with the aim of devising a long-term (10 years) plan for every sector of economic, social, and cultural activity. Each sector is responsible for drawing up its own plans for the future and setting its budgets every one or two years. Now a new plan is being readied for the period from 2019 to 2028.This paper studies the period between 2009 when the plan was initiated and 2018 when it was completed. Among its findings, of special importance are the revitalization of rural society by means of increasing farmers' incomes, encouraging foreign tourism, enhancing the participation of women in the agricultural sector and aiming for an increased reliance on foreign labour. The trend of rural depopulation has necessitated attempts to encourage farming families to stay and city people to move to the country and participate in the local economy and contribute to the rural communities.
Center for the Advancement of Higher Education, Professor, Bongshik Kang 高等教育推進センター 教授 姜　奉植	Korean Association of Logos Management 韓国ロゴス経営学会	Seoul, Korea ソウル （韓国）	2019.5.25	**Title** The founding of Sookmyung women's college and the relationship with Ms. Noe Fuchizawa as a Sookmyung high school supervisor **Abstract** In this paper, it was argued that the person who had made the founding conception of the Sookmyung women's college was the school supervisor Ms. Noe Fuchizawa, and without her, it was very difficult for the conception, planning and founding of the college.
Faculty of Software and Information Science, Professor, Fujita Hamido ソフトウェア情報学部 教授 藤田　ハミド	11th Asian Conference on Intelligent Information and Database Systems （ACIIDS2019） 第11回インテリジェント情報データベースシステム会議	Yogyakarta, Indonesia ジョグジャカルタ （インドネシア）	2019.4.8 ～4.11	**Title** New Challenges in Machine Learning: Multiclass-Classification for Risk Predictions in Health Care Applications **Abstract** Discovering patterns from big data attracts a lot of attention due to its importance in discovering accurate patterns and features that are used in predictions of decision making. The challenges in big data analytics are the high dimensionality and complexity in data representation analytics especially for on-line feature selection. Granular computing and feature selection on data streams are among the challenge to deal with big data analytics that is used for Decision making. We will discuss these challenges in this talk and provide new projection on ensemble deep learning techniques for on-line health care risk prediction. Different type of data (time series, linguistic values, interval data, etc.) imposes some difficulties to data analytics due to preprocessing and normalization processes which are expensive and difficult when data sets are raw, or imbalanced. We will highlight these issues through project applied to health-care for elderly, by merging heterogeneous metrics from multi-sensing environment providing health care predictions assisting active aging at home. We have utilized ensemble learning as multi-classification techniques on multi-data streams using incremental learning to update data change "concept drift"

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Faculty of Software and Information Science, Professor, Fujita Hamido ソフトウェア情報学部 教授 藤田ハミド	7th IAPR International Workshop on Biometrics and Forensics – IWBF2019 バイオメトリクスとフォレンジックに関する第7回IAPR/IEEE国際ワークショップ	Cancun, Mexico カンクン （メキシコ）	2019.5.2 ～5.3	**Title** On New directions in Machine Representation Learning for Biometrical Analytics **Abstract** Discovering patterns from big data attracts a lot of attention due to its importance in discovering accurate patterns and features that are used in predictions for accurate biomedical information for better security. Biometrics provides a suitable robust authenticated identification based on feature extraction for verifiable data. Physiological Analytics are either morphological or biological. Fingerprints, hand or face shapes, facial analysis, vein pattern, iris and retinal feature in the eyes, walking steps patterns, are all different pattern morphological biometrics for authentication purposes used in pattern recognition, Behavioral analytics is also another type of biometrics-based authentication, like voice recognition, signature dynamics, keystrokes, gait, sound of steps and gestures, etc., and all these are used to measure individual behaviors and rhythm, for example, stress or other types of behavior related to aggressive acts in a bank or in a crowd. All these different types of biometrics have different reliability for a variety of purposes. This talk is to highlight new direction on the state of the art on Physiological Analytics (PA) due to its stability in providing better authentication, not affected by stress like in the behavioral ones. PA provides techniques to extract patterns (features) from faces based data, or fingerprint data based analytics to extract features related to features in the face or palm veins or geometry in the hands, or iris recognition, and retina. In this talk, I will focus on face recognition and fingerprints analytics, and its current state of the art. The challenges in big data analytics for facial analytics and fingerprints based data are of high dimensionality and complexity in data representation for feature extraction. Also, it has a class imbalance in the multiclass classification problem. Conventional approaches in machine learning are not providing accurate authentication process in robust feature extraction for objects like beard or hair color change. In this talk, I will present the current state of the art and focus on face recognition main problems in deep learning and multiclass classification in feature selection. Several problems and solutions are to be provided with examples.
Faculty of Software and Information Science, Professor, Fujita Hamido ソフトウェア情報学部 教授 藤田　ハミド	32ND INTERNATIONAL CONFERENCE ON INDUSTRIAL, GINEERING & OTHER APPLICATIONS OF APPLIED INTELLIGENT SYSTEMS (IEA/AIE 2019) 応用インテリジェントシステムの産業、工学及びその他の応用に関する第32回国際会議	Graz, Austria グラーツ （オーストリア）	2019.7.9 ～7.11	**Title** Predicting the listing status of Chinese listed companies using Twin Multi-Class Classification Support Vector Machine **Abstract** Multi-class classification problem is research challenge in many applications. Listing companies' statuses are signals on different risk levels in China's stock markets. The prediction of the listing statuses is complex problem due to imbalance in the data, due to different values and features. In the literature when the list status is divided into two categories for simple measurements using binary classification model, accurate risk management cannot achieved correctly. In this work, we have used SMOTE and wrapper feature selection to reprocess data. Accordingly, we have proposed an algorithm named as Twin-KSVC (twin multi-class support vector machine) which is used for multi-class classification problem by "1-versus-1-versus-rest" structure. Our experiments tested on large sample of data set; show that we could achieve better performance, in comparison with other approach. We have tested our algorithm on different strategies of feature selection for comparison purposes.

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Research and Regional Cooperation Division, Professor Emeritus, SHIBATA Yoshitaka 研究・地域連携本部 特任教授 柴田 義孝	The 13th International Conference on Complex, Intelligent, and Software Intensive Systems, (CISIS2019) 第13回複雑系および知能系ソフトウェア集約システムに関する世界会議	Sydney, Australia シドニー (オーストラリア)	2019. 7. 3 ～ 7. 5	**Title** Realtime Road State Decision System based on Multiple Sensors and AI Technologies **Abstract** This paper introduces a realtime road state decision system in both urban and country roads based on various typed environmental sensors. Those sensors are installed on the vehicle and collects the sensor data with various road surfaces conditions while running along the street. From the collected sensor data, the road surface states are decided such as dry, wet, snowy, icy by sensor server. The decided road states can be share with the many vehicles through V2V and V2I communication protocols. In this paper, the system configuration and decision method of road state conditions in realtime are introduced. Performance evaluation of the prototype with the proposed system is carried out to verify the effect of our suggest method.
Morioka Junior College, Professor, Eiko HARA 盛岡短期大学部 教授 原　英子	the 8th edition of the scientific conference, "CROSSING BOUNDARIES IN CULTURE AND COMMUNICATION" 第8回学術会議「文化とコミュニケーションにおける交錯する境界」	Bucharest, Romania ブカレスト (ルーマニア)	2019.5.24	**Title** Changing Images of Gender in Sports: Comparative Gender Image with Romanian and Japanese **Abstract** In 2018, I made a presentation about the image of women's sports in Japan at this CBCC conference. At that time, I asked participants to complete a questionnaire related to this topic. I will report the results of my data analysis in this presentation. According to my questionnaires data, they show that male Images of 'what sports men likes to play' are concentrated on a few common, well- known sports. However, people's images of 'what sports women like to play' have a great deal of variation. This result indicates that many people easily remember some particular male sports, whereas women's sports names are not established or concentrated strongly in people's memories. Next I will compare the differences from Romanian and Japanese respondents. Also, because women are gradually participating more and more in traditional male sports. I will address the changing images of gender in sports.
Miyako Junior College, Associate Professor, Kaori Saito 宮古短期大学部 准教授 齋藤　香織	The 25th International Conference on Difference Equations and Applications 第25回国際差分方程式学会	London, United Kingdom ロンドン (イギリス)	2019.6.24 ～6.28	**Title** Global attractivity for a Voleterra difference equation of convolution type **Abstract** Many authors have researched the qualitative theory of periodicity, almost periodicity and stability of Volterra Difference equations. These area are great interest to researchers for a long time because of the usefulness it demonstrates in real life applications. Lately, we have been Known the study that is studied the stability conditions of Volterra difference equations by using Liapunov methods. In this study, we consider a sufficient condition for the globally asymptotic stability of a Volterra difference equation.
Faculty of Software and Information Science, Professor, Jun Sasaki ソフトウェア情報学部 教授 佐々木　淳	16th International Conference on Information Systems for Crisis Response and Management (ISCRAM 2019) 災害対応・管理のための情報システムに関する国際会議	Valencia, Spain バレンシア (スペイン)	2019.5.19 ～5.22	**Title** Life-Area Broadcasting System (LABS) for Normal and Emergency Cases by Using Easy Contents Management System and New Speaker Devices **Abstract** The "community" has played an important role in enhancing the regional disaster management capabilities in Japan. This paper proposes a Life-Area Broadcasting System (LABS) for usual and emergency cases. In order to realize very simple and easy management of LABS, we developed the Easy Contents Management System (ECMS). By this system, people can obtain life-area information related to their life support, small events and accident news occurring at their living area not only in emergency cases but also in normal cases by voice, images and text. Further, we developed some new Speaker Devices for unfamiliar users of ICT devices such as elderly users. Those users can receive the service of LABS as like as a television or a radio broadcast terminal anytime and every day. In this paper, we describe the concept of LABS and introduces the developed new systems and devices.

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Center for the Advancement of Higher Education, Professor, ITO Eishiro 高等教育推進センター 教授 伊東　栄志郎	Joyce Without Borders: 2019 North American James Joyce Symposium 国境なきジョイス：北米ジェイムズ・ジョイス・シンポジウム2019	Mexico City, Mexico メキシコシティ（メキシコ）	2019.6.12 ～6.16	**Title** Transjoyce: “checking chinchin chat with nipponnippers!” (FW 485.36–486.1) **Abstract** This paper aims to explore how James Joyce transposed the Irish and European contexts into Chinese and Japanese ones in his works, especially Ulysses and Finnegans Wake. The researcher discussed how the insertion of Chinese and Japanese elements affected the whole alphabetical text. As The James Joyce Archive and other manuscripts indicate, many words and phrases related to China and Japan were inserted into Ulysses after The Little Review serialization. Joyce did a similar kind of later insertions to Finnegans Wake after 1936. It is known that Joyce read “The Chinese Written Character as a Medium for Poetry” serialized in The Little Review between September and December, 1919. It was written by Ernest Fenollosa and Ezra Pound. Joyce called the Japanese language “japlatin” (FW 467.14). He first wrote it in his letter to Harriet Shaw Weaver dated 15 July 1926 (LettersI 242). He also left a memo under the subject heading “Chinese” while finalizing Finnegans Wake in 1938 (VI.B.46–47–48; JJA 40: 152–53). Chinese and Japanese languages are doubtlessly among the minor language groups in Joyce’s list of forty languages (1938: JJA 63: 343), although Chinese is listed 6th from the top, Japanese 7th. Alphabetical characters represent phonemes while Chinese characters can be considered as thought-pictures describing concepts. Japanese syllabic characters developed independently from Chinese characters. Joyce wrote some Japanese phrases with English translation in Finnegans Wake such as FW 233.29–234.05 as if he had purposely showed off the fruit of his effort to learn the Asian language. Pound often wrote to Joyce when he was engaged in Fenollosa’s manuscripts on the Japanese Noh play around 1916 but Joyce did not show any particular interest in it then. Joyce’s interest in China and Japan was gradually stimulated by his daughter Lucia who was interested in Chinese and Japanese art since mid–1920s.
Faculty of Software and Information Science, Professor , CHAKRABORTY Basabi ソフトウェア情報学部 教授 チャクラボルティ　バサビ	International Days in Social Work 2019 ソーシャルワークの国際デー2019	Linz, Austria リンツ（オーストリア）	2019.6.3 ～6.7	**Title** Social Awareness Assessment from Social Media **Abstract** In this lecture, I would like to present our research works on extraction of important topics and change of topics over time in online social media like twitter, blog and video sharing websites by using text mining and machine learning techniques and how the extracted knowledge can be used for assessing social awareness in fulfillment of society’s needs with a case study after great east Japan earthquake.
Faculty of Software and Information Science, Professor , Goutam Chakraborty ソフトウェア情報学部 教授 チャクラボルティ・ゴウタム	University of Applied Sciences Upper Austria, School of Medical Engineering and Applied Social Sciences アッパーオーストリア応用科学大学, 医療工学と応用社会科学	Linz, Austria リンツ（オーストリア）	2019.6.3 ～6.7	**Title** Uncertainty is the Cause of Fear – Correct Prediction is an Essential Tool for Building Prejudice Free Society **Abstract**: What are the types of Information we handle every day? (1) Linear time varying – ECG, pulse, share, forex, music etc. Modeling can be done from its past history, and/or multiple related time-series information. (2) Matrix or tensor with real or categorical information – Earthquake Tremor Data, Credit card records, Amazon sales record, Netflix ratings etc. (3) Textual documents like corpus of scientific papers on a specific area of research – all papers on network science, Roman history. (4) Images – Medical images like Computed Tomography scan, functional MRI, Positron Emission Tomography, etc. In this talk, we explained models for different kinds of data. We discussed how fake/false but believable data are created to influence people, how data in social network evolve, how to identify important information from vast amount of social data like twitter, facebook etc.

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Faculty of Software and Information Science, Lecturer, Akimasa Suzuki ソフトウェア情報学部 講師 鈴木　彰真	The Eighth International Conference on Advances in Vehicular Systems, Technologies and Applications VEHICULAR 2019 第8回自動車の，応用，技術，システムの発展に関する会議	Rome, Italy ローマ （イタリア）	2019.6.30 ～7.4	**Title** Robustness Against Hazard Notifications Around a Vehicle Using Seat Actuators **Abstract** This paper examines the robustness of our proposed haptic notification system against the different types and layers used for driving seat cushions. While many car manufacturers provide useful side and rear collision warning systems with sound alarms or visual monitors, the addition of similar notifications can confuse a driver because they already need to be aware of many visual targets such as mirrors, monitors, and environmental sounds. Therefore, we have investigated a haptic notification system that uses the driver's buttocks. The results show that drivers can correctly identify the directions of five vibrating motors, three intensity settings, and three obstacle types (i.e., pedestrians, vehicles, and motorcycles). In this paper, we investigate whether drivers can discriminate the direction, intensity of vibrations, and vibration patterns of the system through their buttocks to identify the obstacle direction, degree of risk, and the type of obstacle, even if the vibrations are attenuated by the seat cushion. The results indicate the high potential of the haptic sensation system to notify the driver of obstacles, especially those located in the blind spot.
Faculty of Software and Information Science, Professor, Jun Sasaki ソフトウェア情報学部 教授 佐々木　淳	32nd International Conference on Industrial, Engineering & Other Applications of Applied Intelligent Systems (IEA/AIE2019) 第32回インテリジェントシステムの産業・工業等の応用に関する国際会議	Graz, Austria グラーツ （オーストリア）	2019.7.9 ～7.11	**Title** A Classification Method of Photos in a Tourism Website by Color Analysis **Abstract** The number of Foreign Independent Tour (FIT) is increasing in the world. This research aims to develop a personal adaptive tourism recommendation system (PATRS) for FIT. This paper describes the concept of PATRS and related researches. In order to develop the PATRS, an easy feature extraction method from a tourism website is required. The classification of photos of tourism spots is an important technology to realize the feature extraction from numerous information in the website. This paper proposes a classification method of photos in a major tourism website by color analysis. From the results on the experiments, we confirmed that the photos in a tourism website can be classified into four classes by the proposed method.
Center for the Advancement of Higher Education, Professor, ITO Eishiro 高等教育推進センター 教授 伊東　栄志郎	The Eighth International James Joyce Conference: "Joyce and Technological Culture" 第8回国際ジェイムズ・ジョイス学会「ジョイスと技術文化」	Seoul, Korea ソウル （韓国）	2019.5.18 ～5.19	**Title** Joyce in the Machine / Re-Joyce in the Digital Humanities **Abstract** This paper consists of two parts: one part to explore how James Joyce described the technological aspect of Dublin, and the other part to introduce how his works have been studied in the Digital Humanities. The whole academic area of humanities has been facing the massive decline around the world: the number of students, their job opportunities and the financial budgets have been steadily shrinking. So in the Information Age, we will have to do something new to improve the current situation: the digitalization of the literary text to attract much more people in a more accessible way using multimedia features. Readers need enough background knowledge to understand the scholastic texts of James Joyce such as Irish history, Christianity and European cultures. There have been various kinds of annotations, guidebooks and study books for Joyce's works in book form. Recently, numerous websites related to Joyce have appeared to offer annotations and articles free of charge. Joyce himself was very interested in the development of technology as he described some aspects of the early twentieth-century technological culture in his literary works. It seems that he had an obsessional idea to modernize Ireland in order to keep up with other European nations. He failed to popularize film-viewing in Ireland in 1909 but continued to describe Dublin as a modern technological city in his fictions. The digital Joyce studies might be what Joyce wanted us to be engaged in. The ultimate digital Joyce product is probably "Joycestick," a virtual reality game developed by a Boston College team, which enables you to experience the world of Ulysses virtually.

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Faculty of Software and Computer Science, Professor, Yoshitoshi Murata ソフトウェア情報学部 教授 村田　嘉利	International Academy, Research, and Industry Association (IARIA), VEHICULAR 2019 学術・研究・産業国際会議、移動体研究会 2019	Rome, Italy ローマ （イタリア）	2019.6.30 ～7.4	**Title** Car-driving Interface with Load Cells for Upper-extremity-disabled People **Abstract** Disabled people generally want to stand on their own two feet, and achieving mobility is an important step in satisfying that desire. A steering-operation unit for disabled people with disability in their arms was developed and experimentally evaluated. The unit consists of a set of load-cell sensors, one for turning right and one for turning left. The driver steps the right or left load cell to turn the car right or left. The magnitude of the driver's stepping force is converted to a voltage and input to the power-steering motor. The angular velocity of the steering wheel corresponds to that voltage. As a result of this configuration, the driver can drive a car just by moving their foot and intuitively selects the load-cell they must apply by foot to turn the car. Experimental results using a standard car fitted with the developed steering operation unit show that disabled people can drive the car with their foot in a manner close to that achieved with a steering wheel.
Faculty of Software and Information Science, Professor, Takeo TAKENO ソフトウェア情報学部 教授 竹野　健夫	24th International Symposium on Logistics 第24回国際ロジスティクスシンポジウム	Wurzburg, Germany ビュルツブルグ （ドイツ）	2019.7.14 ～7.17	**Title** Multi Objectives Location Allocation Model Considering Provider's Satisfaction for Mobility Service **Abstract** Recently, Sharing Economy is obtained with much attentions including mobility service. For example, Uber is a typical instance of this service. To operate the service, balance among cost, customer satisfaction and provider's satisfaction becomes important to achieve high market share. Namely, low operation cost provides lower fare for the service. And high customer satisfaction provides more frequent request. Not only these traditional aspects but also service provider's satisfaction will be affect performance of the sharing economy because enough number of server is necessary to continue service. We focused on a replacement driver service which is popular mobility service in Japan especially in suburb area. In the service, manager has to not only reduce the operational cost but also maintain balance of service provider's workloads. This characteristic is popularly seen in Mobility Sharing Economy. First, we formulate two objectives Location-Allocation problem in which one objective function corresponds to reducing total travel distance, i.e. cost reduction, and the other one corresponds to workload balance among drivers, i.e. provider's satisfaction. Here, Location Allocation problem is a problem to obtain the optimal facility location to minimize the total distance among facility and demand points. We have introduced a genetic algorithm to solve the model and carried out series of Numerical Experiment to evaluate performance of proposed model. According to the series of Numerical Experiment, our proposed method obtains better allocation compared to manager of actual replacement driver service company. Here we achieve higher balance among drivers compare to actual one. Through the approach, we present that our solutions provide both traditional goal and a new goal considering provider's satisfaction.

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Center for the Advancement of Higher Education, Professor, Wenjing Liu-Wuerz 高等教育推進センター 教授 劉　文静	9th International Scientific Conference “RURAL DEVELOPMENT 2019: Research and Innovation for Bioeconomy” 第9回　国際農村開発学会 2019:生物経済のための調査と革新	Kaunas, Lithuania カウナス （リトアニア）	2019.9.26~ 9.28	**Title** The Changing Social Structure and Function of the Tochikairyoku in Japan: A Case Study of the Iwate Chubu Tochikairyoku **Abstract** The purpose of this paper is to report on the changing social structure and function of the Tochikairyoku (Land Improvement Associations) in Kitakami, Iwate Prefecture, located in North East Japan. This case study was conducted by interviewing executive members of the Iwate Chubu Tochikairyoku and the farming membership working the land and by collecting and examining all available data pertaining to the changes affecting the functioning of this organization. The Tochikairyoku is a non-profit public organization of and for farmers engaged in agriculture or animal husbandry and serves to liaise between farmers and central and local governments. All the costs of management and staff are borne by the members. All decisions to be undertaken must be ratified by the members. The results of the case study indicate that there has been a significant consolidation in the number of Tochikairyoku and farms owing to the dwindling rural population and the ageing of those actively farming the land. Another major factor has been the recent changes in the Japanese Government’s policy that now favours bigger agricultural units over smaller farmers. The Tochikairyoku are instrumental in promoting the new government policies by maintaining irrigation infrastructure and improving the quality of arable land in order to encourage the leasing of land from the smaller farmers to the bigger farm units. The new 2018 Law has effected changes in the election of executive members of the Tochikairyoku to include representatives of agribusiness interests and has introduced a reform of the Tochikairyoku’s accounting practices to make them more transparent.
Faculty of Software and Information Science, Professor, Akio Doi ソフトウェア情報学部 教授 土井　章男	The13th International Conference on Innovative Mobile and Internet Services in Ubiquitous Computing (IMIS-2019) ユビキタスコンピューティングにおける革新的なモバイルおよびインターネットサービスに関する第13回国際会議	Sydney, Australia シドニー （オーストラリア）	2019.7.3 ～7.5	**Title** Study on Resistance Parameter Setting of Acupuncture Treatment Training System **Abstract** This research is a basic research for bringing the sense of force feedback closer to the real feeling. The force feedback feeling is activated by displaying the part and the acupuncture point of the human body as three-dimensional data, operating the haptic device, touching the acupuncture point, and simulating the insertion action of acupuncture is possible. An evaluation experiment was conducted to determine the resistance parameter for obtaining the numerical value which is the reference of the body’s hardness sensation.

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Morioka Junior College, Professor, Eiko HARA 盛岡短期大学部 教授 原　英子	the International Union of Anthropological and Ethnological Sciences (IUAES) 人類学・民族学国際学術会議	Poznan, Poland ポズナン （ポーランド）	2019.8.27 ～8.31	**Title** Changing Images of Gender in Sports: The Case of Women's Rugby in Japan **Abstract** Next month, Rugby World Cup 2019 will begin in Japan. This is a competitions of men's rugby 15s. The first rugby games were held by New Zealand and Australia 's cooperative in 1987, there is also a women's rugby 15s World Cup. It began in Wales in 1991. Women's sports have greatly developed since the 1990's. My report consists of two parts. First, I will give an overview of women's sports and rugby. In this part I will reports the outlines of rugby and especially the history of women's rugby. And second, I will focus on the Japanese rugby reports from the Meiji period to the Heisei period. I will analyze how the verbal images in descriptions of rugby have been changing, perhaps in tandem with changing images of gender in sports, and the rise of women's rugby.
Faculty of Software and Information Science, Professor, CHAKRABORTY Basabi ソフトウェア情報学部 教授 チャクラボルティ　バサビ	IEEE WIEILS 2019 国際リーダーシップサミット	Bejing, China 北京 （中国）	2019.9.6 ～9.7	**Title** Cognitive distraction detection from personal driving behavior **Abstract** In recent years, the importance of driving assistance system is increasing to reduce vehicle accidents. In this lecture, I would like to talk about our studies on detection of cognitive distraction from personal driving behavior. Driving data has been collected from driving simulator and personal driving model has been developed for attentive driving and distracted driving. The main objective of this research is to find out the representation of time series data from driving simulator for efficient differentiation of distracted driving from normal one using deep neural network.
Faculty of Software and Computer Science, Professor, Takashi, Ogata ソフトウェア情報学部 教授 小方　孝	The 3rd. International Workshop on Language Sense on Computer in IJCAI2019 ことば工学研究会 in IJCAI2019	Macao, China マカオ （中国）	2019.8.10 ～8.16	**Title** A Prototype of CM Plot Generation Using an Integrated Narrative Generation System and "Creative Genome" **Abstract** This paper proposes a generation mechanism for Commercial message (CM). In particular, we focus on TVCM. The CM is an image that is acceptable in about a dozen seconds or a fraction. A flexible CM has any common structure and according to that, it can have a narrative subject. Our proposed system consists of integrated narrative generation system (INGS) and creative genome. The system generates a story structure for CM. For future works, we need to expand knowledge bases in the generation system.

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Faculty of Software and Information Science, Professor, CHAKRABORTY Basabi ソフトウェア情報学部 教授 チャクラボルティ　バサビ	Global AI Congress 2019 世界的な人工知能の会議	Kolkata, India コルカタ（インド）	2019.9.12 ～9.14	**Title** Computation Efficient Similarity Measures for Time Series Classification **Abstract** Time series classification (TSC) is becoming very important in the area of pattern recognition with the increased availability of time series data in various natural and real life phenomena. TSC is a challenging problem as the traditional machine learning algorithms for static data are not quite suitable for processing ordered temporal data. Though varieties of approaches are currently developed including recently popular deep neural network models, traditional similarity based models for time series classification or clustering are still considered simple and computationally efficient. Efficient similarity measures are essential for this approach. Various similarity measures have been developed so far, none of them works the best for all real world applications. The most popular one being dynamic time warping (DTW) though it has a high computational cost. In this lecture, I would like to present our proposals of some new computationally efficient similarity measures for increased classification accuracy with lesser computational burden compared to DTW. The efficiency of the proposed similarity measures in comparison with other popular measures will be discussed with the results of simulation experiments over bench mark data sets.
Faculty of Software and Information Science, Professor , Goutam Chakraborty ソフトウェア情報学部 教授 チャクラボルティ・ゴウタム	Global AI Congress 2019 世界的な人工知能の会議	Kolkata, India コルカタ（インド）	2019.9.12 ～9.14	**Title** Efficient Object Detection in 3-Dimension Volumetric Image and Various Applications **Abstract** 3-Dimensional Volumetric Object Detection – problems and solutions are discussed, including a novel RNN based 3-D object detection algorithm explained. Part I of the key-note was on existing algorithms, their Efficiencies with respect application in the field of Computer Aided Diagnosis (CAD) application were explained. Structure of Deep-CNN object detection networks were explained too. Extending 2-D networks to 3-D volumetric images was explained, including complexity increase in training and detection. A novel idea of using Recurrent Neural Network (RNN) for 3-D image analysis was introduced, including its Training and Detection methods, Accuracy and Efficiency, and finally comparison of our proposal RNN based algorithm and 3-D CNN algorithm, for object detection problem, were shown. Better efficiency of the proposed algorithm was the key point.
Faculty of Software and Information Science, Professor, Fujita Hamido ソフトウェア情報学部 教授 藤田　ハミド	THE 18TH INTERNATIONAL CONFERENCE ON INTELLIGENT SOFTWARE METHODOLOGIES, TOOLS, AND TECHNIQUES (SOMET 2019) インテリジェントソフトウェアの方法論、ツール、技術に関する第18回国際会議	Kuching, Malaysia クチン（マレーシア）	2019.9.23 ～9.25	**Title** Multivariate Normal Distribution Based Over-Sampling for Numerical and Categorical Features **Abstract** Imbalanced data classification is an important task in data mining and machine learning. Imbalanced data consists of majority class and minority class, where the majority class leads to miss-classification of minority samples. Various approaches have been proposed in recent years to address this problem. Sampling, which focuses on balancing between classes, is one of the methods to solve the class imbalance problem. In previous our research, we have proposed Multivariate Normal Distribution based Over-Sampling (MNDO), which uses correlations between attributes and statistical methods, and have tackled this problem. In this paper, we propose Multivariate Normal Distribution based Over-sampling for Numerical and Categorical features (MNDO-NC) to sampling a dataset that contains both numerical data and categorical data. First, MNDO-NC generates numerical data using correlation coefficients and multivariate distribution. Next, calculate the distance between the generated data and the original data, and identify 5 nearest neighbors. The categorical data is sampled by applying a voting strategy for the neighborhood sample. Some existing methods generate new samples using distance function, but our method uses positive class statistics. Therefore, it can be applied even if the number of training samples is very small. In addition, outliers can be reproduced stochastically, so more realistic samples can be generated. In the experiment, we used 17 imbalanced datasets, which consist of numerical data and categorical data. To compare with the existing method, 6 sampling methods, 2 scaling and 3 learning methods were used. As a result of the experiment, the proposed method showed the same result as other methods.

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Faculty of Software and Information Science, Professor, Fujita Hamido ソフトウェア情報学部 教授 藤田　ハミド	THE 18TH INTERNATIONAL CONFERENCE ON INTELLIGENT SOFTWARE METHODOLOGIES, TOOLS, AND TECHNIQUES (SOMET 2019) インテリジェントソフトウェアの方法論、ツール、技術に関する第18回国際会議	Kuching, Malaysia クチン （マレーシア）	2019.9.23 ～9.25	**Title** Thermal Infrared Ensemble Tracker with an Algorithm Using Kullback–Leibler Divergence **Abstract** Thermal infrared tracking (TIR) is able to track objects in dark environments such as night. It can be used mainly for surveillance and rescue for surveillance cameras at night. While the development of automatic driving is progressing in recent years, we believe that thermal infrared tracking can contribute to the improvement of safety even in places with few streetlights. However, unlike normal visual object tracking, thermal infrared tracking itself has some problems. In this paper, we propose an algorithm for improving the accuracy by selecting the optimal feature map for each sequence using Kullback–Leibler divergence (KLD) amount for ensemble tracking using the powerful expression ability of convolutional neural network (CNN). Using KLDs from response maps obtained from an ensemble tracker with multi–layer convolutional features in thermal infrared tracking (MCFTS), we determine the CNN filter most involved in creating the response map. By adjusting the bias value corresponding to these filters and learning the filter, it is possible to create a tracker corresponding to the sequence each time. In order to evaluate the performance of the tracker and conventional tracker which applied the proposed algorithm, we experimented with the thermal infrared tracking benchmark of VOT–TIR2016. We also compared the 24 types of trackers that were evaluated in the thermal infrared tracking benchmark. The experimental results demonstrate that the proposed tracker achieves effective and promising performances with some sequences. **Title** Emotion Recognition by Convolutional Neural Network Based on EEG–Images Plotting Time Series Data **Abstract** One way to recognize human emotions is to use physiological signals. In particular, EEG is noticed because it is non–invasive and inexpensive. However, it is difficult to perform recognition with high accuracy because there are a number of problems such as EEG signals have a lot of noise. The high accuracy analysis of EEG is the subject of research by many researchers. In this paper, we propose converting EEG signals into images and performing emotion classification tasks using CNN. In the experiment, we use DEAP dataset, which is often used in emotion recognition tasks using EEG. The EEG signal is divided into short segments based on a predetermined time window and plotted in time series data format to generate images. About the data plotting method, the image is generated by the method of making 32 classes and the method of making 4 classes. The generated images are classified into each emotions using a convolutional neural network. The classification use two axes, arousal and valence. The best results differ by gender. Men are able to get the best results when the time window is 1.0 with a 4–class image. The accuracy at these results is 63.75% for arousal and 63.36% for valence. The time window is 1.5 seconds and arousal is 65.37% when women use 4–class images. On the other hand, valence is 59.96% in 1.5 seconds when using a 32–class image. Also, it is found that arousal tends to be higher for women and valence tends to be higher for men. The experimental results show that the proposed method outperforms some related work. The proposed method is not dependent on the dataset, so it can be applied to research using various data.

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Faculty of Software and Information Science, Professor, Fujita Hamido ソフトウェア情報学部 教授 藤田　ハミド	The 10th International Conference of Business Intelligence and Financial Engineering (BIFE 2019) 第10回ビジネスインテリジェンスと金融工学の国際会議	Xidian, China 西安 （中国）	2019.8.14 ～8.17	**Title** New Challenges in Machine Learning: Multiclass-Classification for Risk Predictions in Health Care Applications **Abstract** The challenges in big data analytics are the high dimensionality and complexity in data representation analytics especially for on-line feature selection. Granular computing and feature selection on data streams are among the challenge to deal with big data analytics that is used for Decision making. We will discuss these challenges in this talk and provide new projection on ensemble deep learning techniques for on-line health care risk prediction. Different type of data (time series, linguistic values, interval data, etc.) imposes some difficulties to data analytics due to preprocessing and normalization processes which are expensive and difficult when data sets are raw, or imbalanced. We will highlight these issues through project applied to health-care for elderly, by merging heterogeneous metrics from multi-sensing environment providing health care predictions assisting active aging at home. We have utilized ensemble learning as multi-classification techniques on multi-data streams using incremental learning to update data change “concept drift“
Faculty of Software and Information Science, Professor, Fujita Hamido ソフトウェア情報学部 教授 藤田　ハミド	IEEE Joint 19th International Symposium on Computational Intelligence, and Informatics and 7th International Conference on Recent Achievements in Mechatronics, Automation, Computer Sciences and Robotics 第19回計算知能に関する国際シンポジウムおよびインフォマティクスと第7回メカトロニクス、オートメーション、コンピューターサイエンス、ロボティクスの最近の成果に関する国際会議	Szeged, Hungry セゲド （ハンガリー）	2019.11.13 ～11.16	**Title** Data Analytics for Health-Care Risk Predictions based on Ensemble Classifiers and Subjective Projection **Abstract** Granular computing and feature selection are among the challenge to deal with big data analytics that is used for Decision making. We will discus these challenges in this talk and provide new projection on ensemble learning for health care risk prediction. In decision making most approaches are taking into account objective criteria, however the subjective correlation among different ensembles provided as preference utility is necessary to be presented to provide confidence preference additive among introducing ambiguity and produce better utility preferences measurement for good quality predictions. Most models in Decision support systems are assuming criteria as independent. Different type of data (time series, linguistic values, interval data, etc.) imposes some difficulties to data analytics due to preprocessingand normalization processes which are expensive and difficult when data sets are raw and imbalanced. We will highlight these issues though project applied to health-care for elderly, by merging heterogeneous metrics for providing health care predictions for elderly at home. We have utilized ensemble learning as multi-classification techniques on multi-data streams that collected from multi- sensing devices. Subjectivity(i.e., service personalization)would be examined based on correlations between different contextual structures that are reflecting the frame work of personal context, for example in nearest neighbor based correlation analysis fashion. Some of the attributes incompleteness also may lead to affect the approximation accuracy. Attributes with preference-ordered domain relations properties become one aspect in ordering properties in rough approximations. We outline issues on Virtual Doctor Systems, and highlights its innovation in interactions with elderly patients, also discuss these challenges in granular computing and decision support systems research domains. In this talk I will present the current state of art and focus it on health care risk analysis with examples from our experiments.

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Faculty of Software and Information Science, Professor, Fujita Hamido ソフトウェア情報学部 教授 藤田　ハミド	International Conference on Cyber Securities for Emerging Technology, (CSET2019) 新興技術のサイバーセキュリティに関する国際会議	Doha, QATAR ドーハ （カタール）	2019.10.26 ～ 10.31	**Title** New Directions in Machine Learning for Biometrical Analytics **Abstract** Discovering patterns from big data attracts a lot of attention due to its importance in discovering accurate patterns and features that are used in predictions for accurate biomedical information for better security.Biometrics provides a suitable robust authenticated identification based on feature extraction for verifiable data. Physiological Analytics are either morphological or biological. Finger prints, hand or face shapes, facial analysis, vein pattern, iris and retinal feature in the eyes, walking steps patterns, are all different pattern morphological biometrics for authentication purposes used in pattern recognition, Behavioral analytics is also another type of biometrics based authentication, like voice recognition, signature dynamics, keystrokes, gait, sound of steps and gestures, etc., and all these are used to measure individual behaviors and rhythm, for example stress or other type of behavior related to aggressive act in bank or in crowd. All these different types of biometrics have different reliability for variety of purpose. This talk provide new direction on the state of art on Physiological Analytics (PA) due to its stability in providing better authentication, not affected by stress like in the behavioral ones.PA provides techniques to extract patterns (features) from faces based data; or fingerprint data based analytics to extract features related to features in the face or palm veins or geometry in the hands, or iris recognition, and retina. In this talk I will focus on face recognition and fingerprints analytics, and its current state of art. The challenges in big data analytics for facial analytics and fingerprints based data are of high dimensionality and complexity in data representation for feature extraction. Also it has class imbalance in multiclass classification problem. Conventional approaches in machine learning are not providing accurate authentication process in robust feature extraction for object like beard or hear color change. In this talk I will present the current state of art and focus it on face recognition main problems in deep learning and multiclass classification in feature selection.
Faculty of Software and Information Science, Associate Professor, Bhed Bahadur Bista ソフトウェア情報学部 准教授 ベッド バハドゥール ビスタ	The 14th International Conference on Broad-Band Wireless Computing, Communication and Applications (BWCCA-2019) ブロードバンドワイヤレスコンピューティング、通信、およびアプリケーションに関する第14回国際会議	Antwerp, Belgium アントワープ （ベルギー）	2019.11.7 ～11.9	**Title** A Probabilistic Offloading Approach in Mobile Edge Computing **Abstract** The mobile edge computing (MEC) is a new paradigm for providing computing at the edge of networks to support wireless devices to offload computational intensive tasks to MEC server for execution. In AQ1 mobile environment, different users have different sizes of computation tasks with different target latency for smooth running of applications. Moreover, tasks will arrive at the MEC server for execution at different rate depending upon the time of the day or users density. In such varying environment, it is necessary to consider probabilistic approach to offload tasks for successful mobile edge computing. In this paper, we derive successful computation probability, successful communication probability and successful edge computing probability. We then simulate how the successful probabilities change for different sizes of task, target latency and task arrival rate.

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Faculty of Software and Information Science, Professor, Fujita Hamido ソフトウェア情報学部 教授 藤田　ハミド	2019 International Conference on Hospital Development and Reform （第七届中国医院发展与管理国际会议，上海交大医学院首届国际医疗人工智能学术论坛） 病院開発改革国際会議	Shanghai, China 上海 （中国）	2019.10.19 ～10.20	**Title** Machine Learning Analytics for Smart Health-Care Systems: Better and smart health services （基于机器学习分析的智能医疗系统：更好、更智能的医疗服务） **Abstract** Machine learning research progress has advanced Artificial Intelligence for healthcare analytics: Early predication and system helps elderly and else.　I will highlight these issues through project applied to health-care for elderly, using multi-sensing environment and machine learning advanced technology for health care predictions and delivery.　Machines that learn from data can provide a variety of health services that assist clinics in medical practices for better quality and precision. I will talk on the recent progress in Machine Learning technology showing how these can be utilized in provided service support system for better well-being at home.
Faculty of Policy Studies, Associate Professor, Shinichi Kondo 総合政策学部 准教授 近藤　信一	The 8th World Forum on China Studies 第8回世界中国学フォーラム	Shanghai, China 上海 （中国）	2019.9.10 ～9.11	**Title** Acquisition of New Competitive Advantage by Introducing and Utilizing AI at the Manufacturing Site of Manufacturing Enterprises **Abstract** The biggest issue in the medium- and long-term in Japanese manufacturing companies is “the decline in the working population”. In other words, it is more difficult to secure workers. Manufacturing companies are forced to produce in a shortage of human resources, which means that the source of competitive advantage of manufacturing companies is weakened. Therefore, what is expected is the reconstruction of the manufacturing site that combines new technologies such as IoT, AI, robotics, and 5G. In this research, from the perspective of business strategy theory, I should research how competitive advantage should be at the time of how to introduce and utilize new technologies, especially AI, at manufacturing sites. I researched for the purpose of research to maintain and improve the competitive advantage of manufacturing companies.
Faculty of Software and Computer Science, Professor, Yoshitoshi Murata ソフトウェア情報学部 教授 村田　嘉利	ITS World Congress アイティーエス世界会議	Singapore シンガポール	2019.10.21 ～10.25	**Title** Car-driving Operation Unit with Load Cells for Physical Disabled People **Abstract** Disabled people generally want to stand on their own two feet, and achieving mobility is an important step in satisfying that desire. New car-driving operation units for disabled people with disability in their arms were developed and experimentally evaluated. The steering-operation unit consists of a set of load-cell pedals. The driver steps the right or left load cell to turn the car right or left. The accelerator or brake-operation unit also consists of a load-cell. The driver steps them to control the speed. The magnitude of the driver’s stepping force is converted to a voltage and input to the power-steering motor, accelerator or brake driver unit. Experimental results using the proposed units show that disabled people can drive the car with their foot in a manner close to that achieved with existing operation units.

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Faculty of Software and Information Science, Professor, Fujita Hamido ソフトウェア情報学部 教授 藤田　ハミド	The 5th International Conference on Intelligent Computing, Communication & Devices 第5回インテリジェントコンピューティング、通信、デバイスに関する国際会議	X'ian, China 西安 （中国）	2019.11.21 ～11.24	**Title** New Challenges in Machine Learning: Multiclass-Classification for Risk Predictions in Health Care Applications **Abstract** （1）http://www.iccdconference.com/2019/menu/Invited-Speakers Discovering patterns from big data attracts a lot of attention due to its importance in discovering accurate patterns and features that are used in predictions of decision making. The challenges in big data analytics are the high dimensionality and complexity in data representation analytics especially for on-line feature selection. Granular computing and feature selection on data streams are among the challenge to deal with big data analytics that is used for Decision making. We will discuss these challenges in this talk and provide new projection on ensemble deep learning techniques for on-line health care risk prediction. Different type of data (time series, linguistic values, interval data, etc.) imposes some difficulties to data analytics due to preprocessing and normalization processes which are expensive and difficult when data sets are raw, or imbalanced. We will highlight these issues through project applied to health-care for elderly, by merging heterogeneous metrics from multi-sensing environment providing health care predictions assisting active aging at home. We have utilized ensemble learning as multi-classification techniques on multi-data streams using incremental learning to update data change "concept drift" Subjectivity (i.e., service personalization) would be examined based on correlations between different contextual structures that are reflecting the framework of personal context, for example in nearest neighbor based correlation analysis fashion. Some of the attributes incompleteness also may lead to affect the approximation accuracy. I present deep learning feature selection in medical application early predictions (heart diseases and others).
Faculty of Software and Information Science, Professor, Akio Doi ソフトウェア情報学部 教授 土井　章男	The 14th International Conference on P2P, Parallel, Grid, Cloud and Internet Computing P2P、パラレル、グリッド、クラウド、インターネットコンピューティングに関する第14回国際会議	Antwerp, Belgium アントワープ （ベルギー）	2019.11.7 ～11.9	**Title** Proposal of Transesophageal Echo Examination Support System by CT Imaging **Abstract** Transesophageal echocardiography and CT imaging have used to provide definite diagnosis of cardiac diseases such as angina and myocardial infarction. Transesophageal echocardiography has performed by manually adjusting probe depth and the ultrasound irradiation angle while referring to the echo image. However, it is difficult to grasp the three-dimensional (3D) position of the heart only with echo images. Moreover, it takes a long time and puts a heavy burden on patients and doctors. Therefore, we propose a new method in order to create a preoperative plan smoothly. This method replaces conventional transesophageal echocardiography with CT images. Our system can inspect CT images interactively, and the examination time is shorter and there is no burden on the patient compared to transesophageal echocardiography.

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Faculty of Software and Information Science, Professor , Goutam Chakraborty ソフトウェア情報学部 教授 チャクラボルティ・ゴウタム	IEEE System, Man and Cybernatics society 電気電子工学学会	Bari, Italy バーリ （イタリア）	2019.10.6 ～10.9	**Title** Evaluation of Malignancy of Lung Nodules from CT Image Using Recurrent Neural Network **Abstract** The efficacy of treatment of cancer depends largely on early detection and correct prognosis. It is more important in case of pulmonary cancer, where the detection is based on identifying malignant nodules in the Computed Tomography (CT) scans of the lung. There are two problems for making correct decision about malignancy: (1) At early stage, the nodule size is small (length 5 to 10 mm). As the CT scan covers a volume of 30cm: 30cm: 40cm:, manually searching for nodules takes a very long time (approximately 10 minutes for an expert). (2) There are benign nodules and nodules due to other ailments like bronchitis, pneumonia, tuberculosis. To identify whether the nodule is carcinogenic needs long experience and expertise. In recent years, several works have been reported to classify lung cancer using not only the CT scan image, but also other features causing or related to cancer. In all recent works, for CT image analysis, 3-D Convolution Neural Network (CNN) is used to identify cancerous nodules. In spite of various preprocessing used to improve training efficiency, 3-D CNN is extremely slow. The aim of this work is to improve training efficiency by proposing a new deep NN model. It consists of a hierarchical (sliced) structure of recurrent neural network (RNN), where different layers of the hierarchy can be trained simultaneously, decreasing training time. In addition, selective attention (alignment) during training improves convergence rate. The result shows a 3-fold increase in training efficiency, compared to recent state-of-the-art work using 3-D CNN.
	Mathematics and Science Education, Universitas Pendidikan Indonesia インドネシアペンディディカン大学数学および科学教育	Jakarta, Indonesia ジャカルタ （インドネシア）	2019.10.12	**Title** Mining Big-data – the Graphical Approach Case studies with Aftershock Prediction and Collaborative Filtering **Abstract** As real world data generates, new data nodes are connected based on the principle of preferential attachment. SWN (Small World Network) forms communities of very small diameter, around a few central nodes important within the communities. SWN does not retain all information of the data set. Yet, detecting communities and identifying central nodes in each community, leads to important knowledge about the data. Depending on goal, appropriate node and link definitions are needed. Community detection and centrality identification lead to interesting knowledge about the data.
Faculty of Software and Information Science, Professor, CHAKRABORTY Basabi ソフトウェア情報学部教授　チャクラボルティ　バサビ	TENCON 2019 技術・知識・社会の会議	Kochi, India コーチ （インド）	2019.10.17 ～10.20	**Title** An Approach for Designing Low Cost Deep Neural Network based Biometric Authentication Model for Smartphone User **Abstract** With the increasing use of smartphones, lots of smartphone based applications have been developed. Smartphones are used in personal health care or monitoring activities of elderly persons. These types of smartphone applications require continuous authentication of the user for taking action in case of detachment of the smartphone from the user due to forgetfulness or theft. Continuous authentication on smartphone requires authentication process having low computational overhead. In this work, the objective is to develop low cost user authentication algorithm from time series data of user activities taken from sensors like accelerometer or gyroscope. Deep neural networks are used for user authentication. A two-step authentication process has been developed in which sensor data has been first classified into different activities and activity dependent authentication is proposed. For lowering computational cost of classifier, knowledge distillation is used to reduce the model parameters. Fine tuning is used to cope with the limited number of training data. As a result the authentication accuracy has been improved by 5¥% to 10¥%, also authentication time of 0.032 sec has been achieved which is useful for real time authentication. Simulation studies have been done by several bench mark data sets to evaluate the efficiency of the proposed approach.

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Faculty of Software and Information Science, Lecturer, Hiroki Tomizawa ソフトウェア情報学部 講師 富澤　浩樹	16th Conference on Business Information Systems 第16回ビジネス情報システムに関する国際会議	Budapest, Hungary ブダペスト（ハンガリー）	2019.11.8 ～11.9	**Title** A Basic Study on the Portal Site in cooperation with Earthquake Disaster-related Materials Digital Archiving System **Abstract** The Great East Japan Earthquake and Tsunami, which occurred on 11 March 2011, devastated the Tohoku region and surrounding areas in Japan. Even today, we are still on the long road to recovery. At present, regional libraries have started archiving paper-based earthquake-related materials in an effort to pass on the memories of the disaster to later generations before such memories start fading. But it is challenging to find target archive materials using the bibliographic records registered in the Online Public Access Catalog (OPAC). And as a vast amount of archive materials have already been registered in OPAC, essential solution is considered unlikely. So, in this study, we tried to design a portal site in cooperation with the digital archive system for earthquake-related materials. We asked several library staff members in charge of earthquake-related materials to evaluate the portal site design. As a result, the library staff almost agreed on the design and function. Furthermore, we recognized that it was necessary to encourage participation in disaster learning workshops and reconstruction tourism at the library in order to activate the use of materials.
Faculty of Software and Computer Science, Professor, Yoshitoshi Murata ソフトウェア情報学部 教授 村田　嘉利	International Telecommunication Union (ITU), Kaleidoscope 国際電気通信連合、カレイドスコープ	Atlanta, United State of America アトランタ（アメリカ合衆国）	Pre-event: 2019.12.2 ～12.3 Conference: 2019.12.4 ～12.6	**Title** MODULE STRUCTURE FOR FOOT PROSTHETIC AND INTERFACE STANDARDIZATION **Abstract** Several million people around the world live with limb loss. Prosthetics are useful to improve their quality of life, and some powered prosthetics enable them to walk naturally. However, most are too expensive for most amputees to afford. We propose a module structure for a foot prosthetic and standardized interfaces between modules to lower the price of powered ones. The prosthetic is battery-powered and controlled by data from sensors built into the heel of a shoe for a healthy foot. Some modules can be applied to people with walking disabilities. Such standardization can lower the price of such modules, and many amputees and people with walking disabilities, such as hemiplegia, can easily afford them, which can help improve their quality of life.
Faculty of Software and Information Science, Associate Professor, ソフトウェア情報学部 准教授 高木　正則	IEEE International Conference on Teaching, Assessment, and Learning for Engineering (TALE) 教育・評価・学習に関する国際会議	Yogyakarta, Indonesia ジョグジャカルタ（インドネシア）	2020.2.10 ～2.13	**Title** Development and Evaluation of a Farm Operation Recording Function for Promoting Reflection in Practical Training at an Agricultural High School **Abstract** We propose a system for supporting agricultural work evaluations using environmental data to promote reflection after practical training at an agricultural high school. This system enables students to extract work records that must be accumulated for each task and passed on to students as empirical rules the following year for utilization as learning materials. The system can thus be expected to encourage deeper learning, while also improving crop yield and quality, because students can grasp the knowledge and techniques necessary for farm tasks and to adopt measures for the future. This paper outlines the system and reports the results of its use to record farm tasks, a system function students apply in their practice at an agricultural high school.